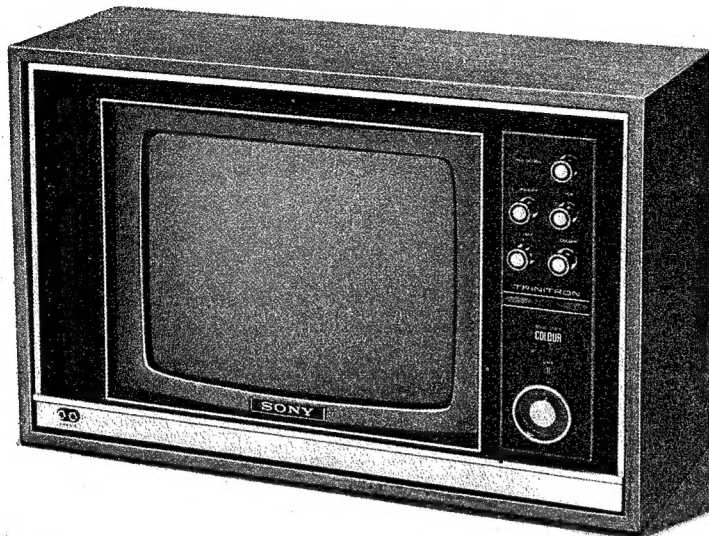


KV-1320UB

UK and Hongkong Model

Serial No. up to 100,000



**TRINITRON®
COLOUR TV**

SPECIFICATIONS

TV-signal standards:	British colour TV standards (CCIR system I)	Automatic controls:	ACC(automatic colour control) ACK(automatic colour killer) ADG(automatic degaussing) ABL(automatic brightness limiter) ANC(automatic noise canceller) AFC(automatic frequency control) AFT(automatic fine tuning) AGC(automatic gain control) AVR(automatic voltage regulator)
Semiconductors:	68 transistors, 40 diodes, 1 high voltage rectifier, 2 thermistors, 2 ICs, 2 posistors and 2 VDRs	Power requirements:	AC 240V, 50 Hz
Channel coverage:	UHF; ch. 21 ~ 68	Power consumption:	AC 98 watts
Aerial system:	75-ohm aerial terminal type	Jack:	Earphone jack 2 pcs
IF circuit:	5 stages with 2 double tuned and 3 single tuned elements	Dimensions:	506 mm (W) x 338 mm (H) x 445 mm (D)
Intermediate frequency:	Picture i-f carrier; 39.5 MHz Sound i-f carrier; 33.5 MHz	Accessories:	Earphone ME-20B Polishing cloth Instruction manual etc.
Video system:	Red, green and blue cathode drive system		
Sound system:	6 MHz intercarrier system Power output; 1 watt (at 10% harmonic distortion) Speaker; 8x12 cm, 16-ohm voice coil		
Convergence correction system:	Horizontal; electrostatic deflection system Vertical; magnetism correction system of magnet		

SONY®
SERVICE MANUAL

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
1.	OUTLINE		4-3.	Automatic Fine Tuning (AFT) Alignments	20~21
1-1.	External View	3	4-4.	Deflection Circuit Adjustments	22~23
2.	DISASSEMBLY		4-5.	Colour Circuit Adjustments	24~28
2-1.	Rear Cover Removal	4		BLOCK DIAGRAM	29
2-2.	Cabinet Removal	4		MOUNTING DIAGRAM	
2-3.	Controls and AFT Select Switch Replacement	5		AFT Circuit Board	30
2-4.	Speaker Replacement	5		UIF Circuit Board	31
2-5.	UHF Tuner Removal	6		HA Circuit Board	32
2-6.	Printed Circuit Board Removal	6~7		CD Circuit Board	33~36
2-7.	Picture Tube Removal	7~8		S Circuit Board	37~40
2-8.	Picture Tube Installation	9		P Circuit Board	41~44
2-9.	FBT & HOT Removal	9~10		ID Circuit Board	45~46
3.	SERVICE ADJUSTMENTS			T Circuit Board	47
3-1.	Beam Landing Adjustments	11		WAVEFORMS	48
3-2.	Convergence Adjustments	12~15		SCHEMATIC DIAGRAM	49~51
3-3.	White Balance Adjustments	15		EXPLODED VIEW	52~56
4.	CIRCUIT ADJUSTMENTS			PACKING	57
4-1.	Video I-f Alignments	16~19		ELECTRICAL PARTS LIST	58~67
4-2.	Sound I-f Alignments	19~20			

WARNING!!

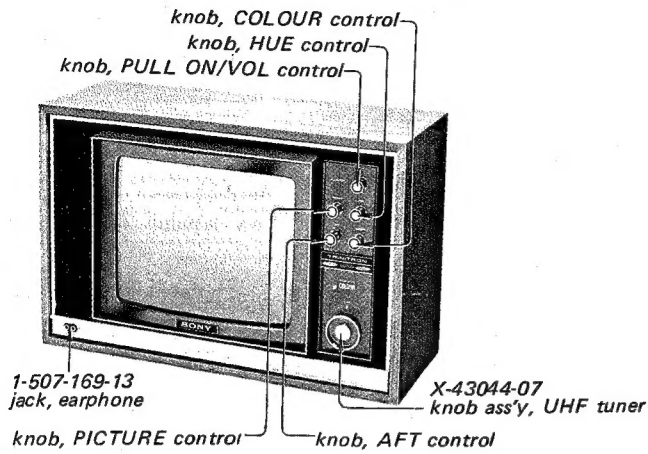
THIS CHASSIS OPERATES WITH ONE SIDE OF THE POWER LINE CONNECTED TO THE CHASSIS. TO ELIMINATE SHOCK HAZARD AND PROTECT EQUIPMENT WHEN SERVICING THE SET WITH THE COVERS REMOVED, MAKE SURE THAT THE SET IS PLUGGED INTO A SUITABLY-RATED ISOLATION TRANSFORMER.

X-RAY RADIATION WARNING!!

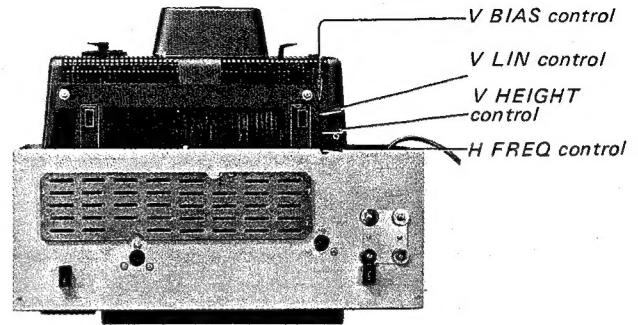
BE SURE THAT PARTS REPLACEMENT IN THE HIGH VOLTAGE BLOCK AND ADJUSTMENTS MADE TO THE HIGH VOLTAGE CIRCUITS BE CARRIED OUT PRECISELY IN ACCORDANCE WITH THE PROCEDURES GIVEN IN THIS MANUAL.

SECTION 1 OUTLINE

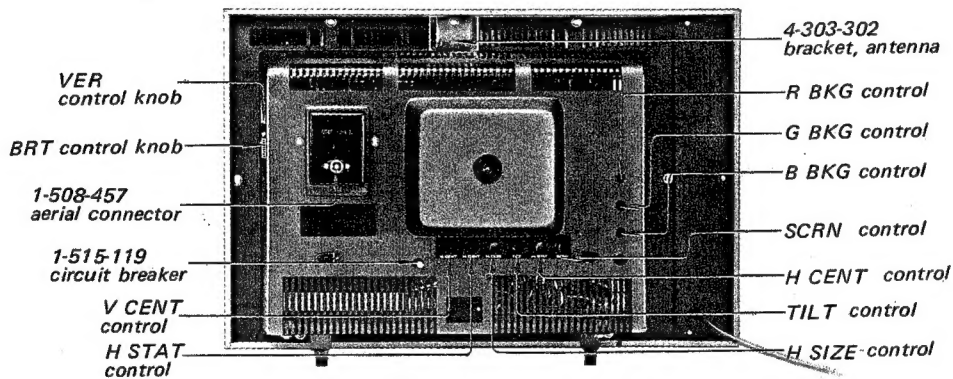
1-1. EXTERNAL VIEW



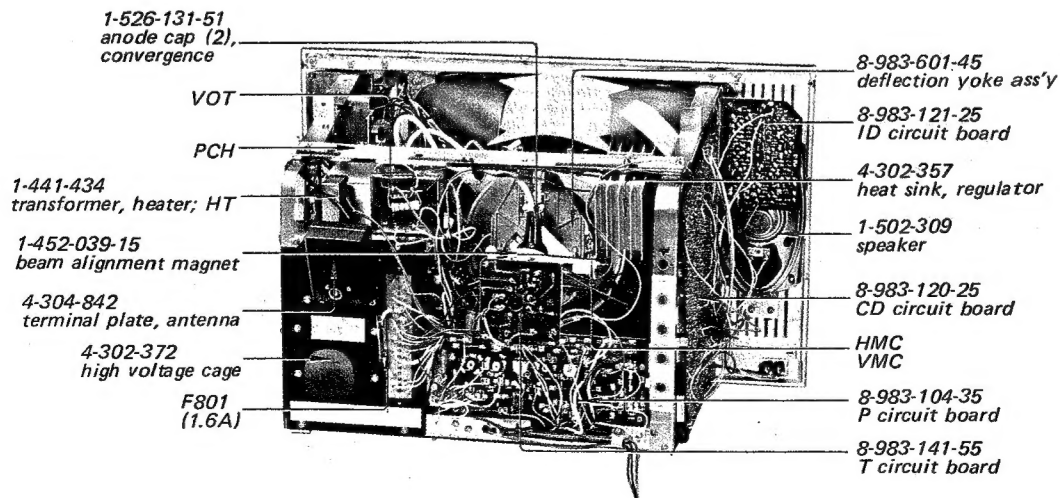
Front View



Bottom View



Rear View



Inside View

SECTION 2 DISASSEMBLY

2-1. REAR COVER REMOVAL

1. Pull off the VER and BRT control knobs.
2. Remove nine screws labeled A1 ~ A9 in Fig. 2-1.
3. Place the unit rear-side-up on a padded work surface.

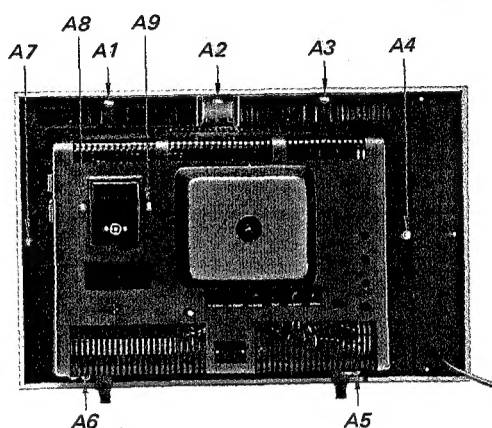


Fig. 2-1.

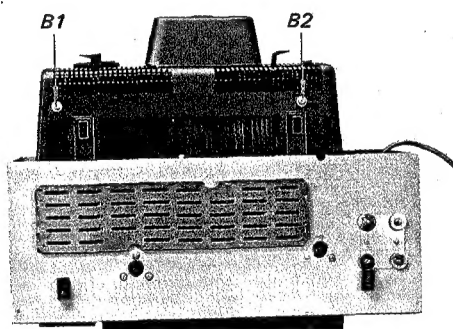


Fig. 2-2.

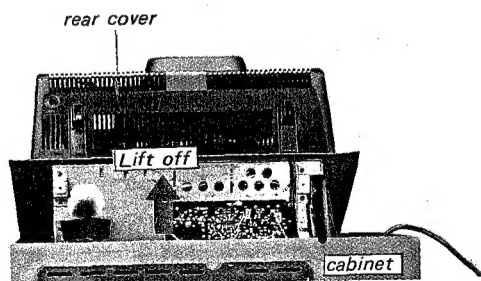


Fig. 2-3.

4. Remove the two screws labeled B1 ~ B2 in Fig. 2-2.
5. Lift off the rear cover as shown in Fig. 2-3.

2-2. CABINET REMOVAL

1. Remove the rear cover.
2. Remove the two screws labeled C1 ~ C2 in Fig. 2-4.
3. Remove the two screws labeled D1 ~ D2 in Fig. 2-5.
4. Lift off the cabinet as shown in Fig. 2-6.

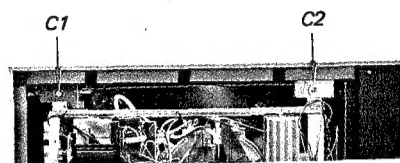


Fig. 2-4.

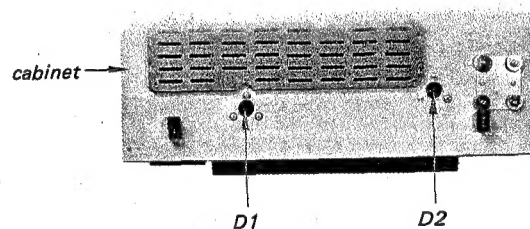


Fig. 2-5.

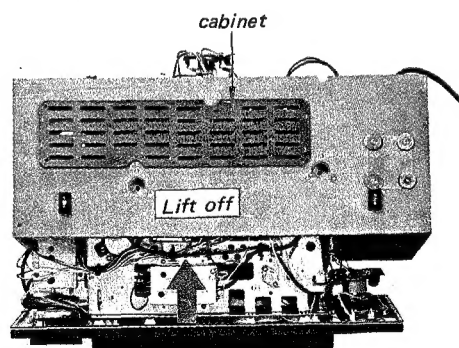


Fig. 2-6.

2-3. CONTROLS AND AFT SELECT SWITCH REPLACEMENT

1. Remove the rear cover.
2. Pull off the PULL ON/VOL, HUE, COLOUR, PICTURE, and AFT control knobs.
3. Remove the four screws labeled E1 ~ E4 in Fig. 2-7.
4. Remove the screw labeled F1 in Fig. 2-8.
5. Remove the front side variable resistor insulating board as shown in Fig. 2-9.
6. Replace a control (PULL ON/VOL, TINT, COLOUR or PICTURE) or AFT select switch.

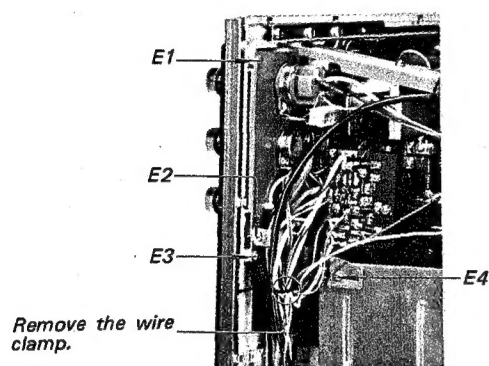


Fig. 2-7.

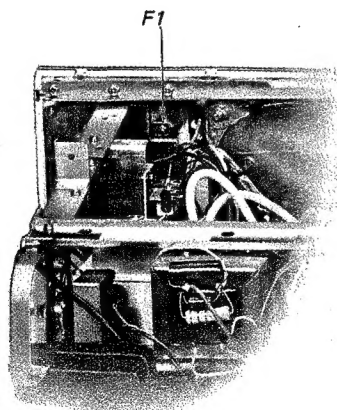


Fig. 2-8.

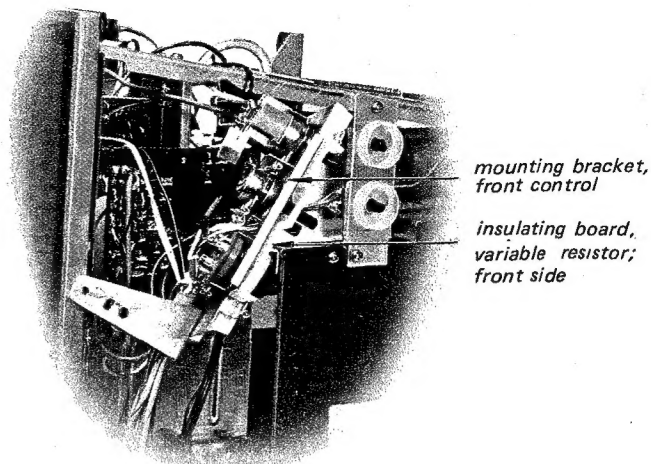


Fig. 2-9.

2-4. SPEAKER REPLACEMENT

1. Remove the rear cover and the cabinet.
2. Remove the ID circuit board.
3. Remove the four screws labeled H1 ~ H4, and the speaker holding brackets as shown in Fig. 2-10.
4. Unsolder the two leads which is connected to the speaker.
5. Replace the speaker.

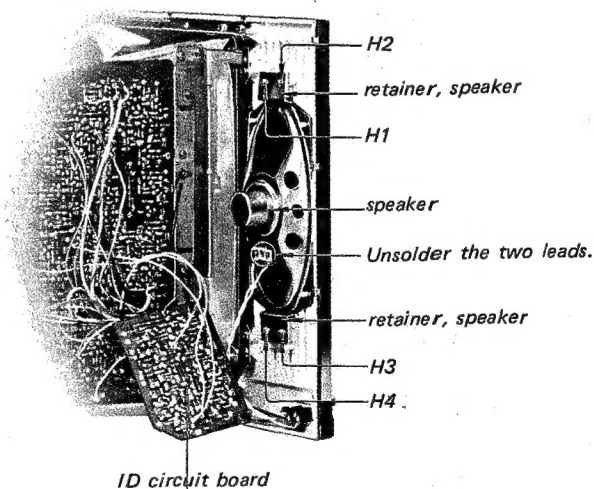


Fig. 2-10.

2-5. UHF TUNER REMOVAL

1. Pull off the UHF fine-tuning control and UHF channel selector.
2. Remove the rear cover and the cabinet.
3. Remove the five screws labeled I1 ~ I5 in Fig. 2-11.
4. Remove the three screws labeled J1 ~ J3 in Fig. 2-12.
5. Unsolder the following leads as shown in Fig. 2-13.

B1+	WHT/BRN
B2+	WHT/ORG
AFT	GRY (shielded wire)
AGC	YEL
6. Pull out the phono plugs of the ANT input and UIF coaxial cables.

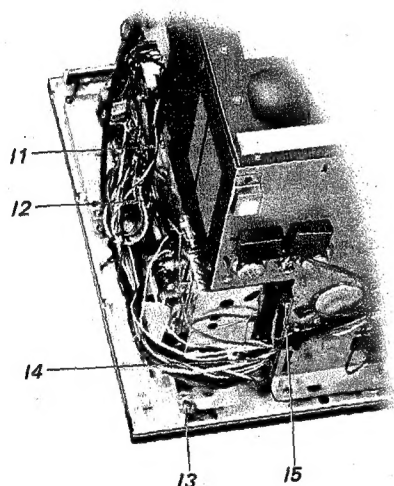


Fig. 2-11.

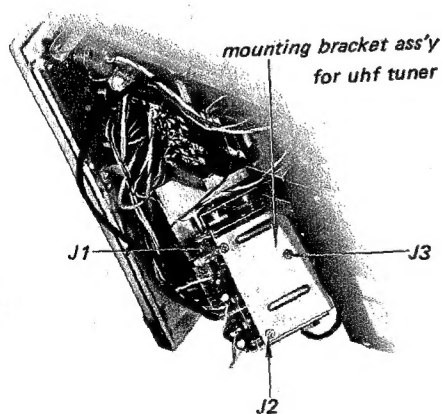


Fig. 2-12.

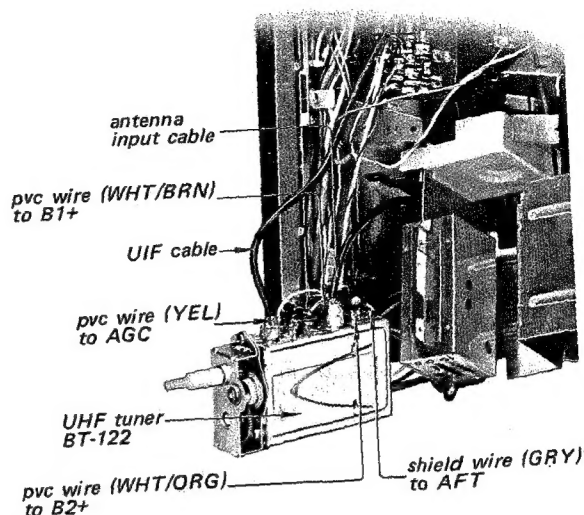


Fig. 2-13.

2-6. PRINTED CIRCUIT BOARD REMOVAL

Remove the rear cover and the cabinet to perform the following items.

S Circuit Board

1. Place the unit rear-side-up on a padded work surface.
2. Remove the two screws labeled K1 ~ K2 in Fig. 2-14.
3. Swing the S circuit board to the front.

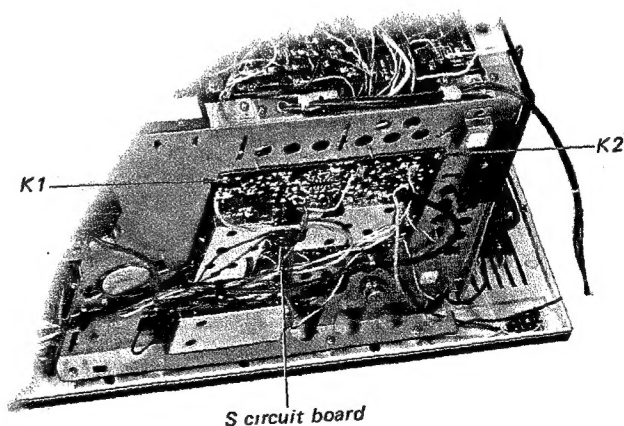


Fig. 2-14.

CD Circuit Board

1. Remove the two screws labeled L1 ~ L2 in Fig. 2-15.
2. Pull out the three pin-plugs on the T circuit board that connect between the red, blue and green output leads of CD circuit board and the T circuit board as shown in Fig. 2-15.
3. Swing the CD circuit board to the front.

ID Circuit Board

Take off the ID circuit board by removing the three screws labeled M1 ~ M3 in Fig. 2-15.

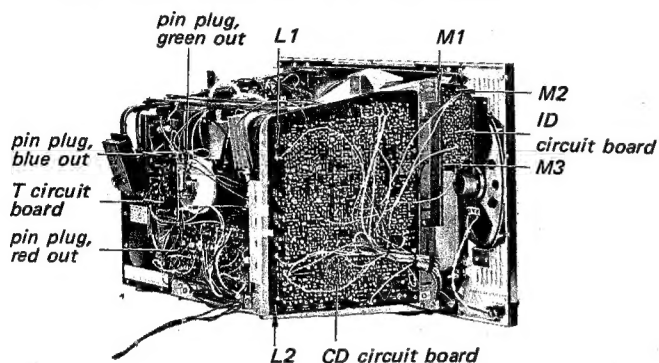


Fig. 2-15.

P Circuit Board

1. Remove the two screws labeled N1 ~ N2 in Fig. 2-16.
2. Swing the P circuit board to the front.

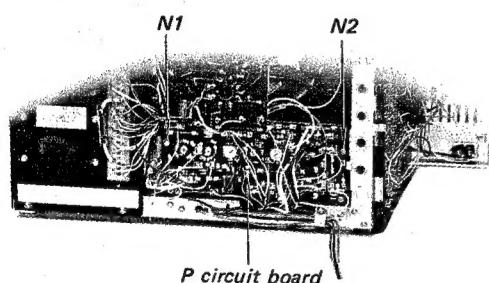


Fig. 2-16.

UIF Circuit Board

1. Remove the three screws labeled P1 ~ P3 in Fig. 2-17.
2. Loosen the lead clamp, and remove the leads. See Fig. 2-17.
3. Swing the UIF block to the front.

4. Remove the UIF shield and the bottom cover.
5. Remove the UIF circuit board.

AFT Circuit Board

1. Remove the two screws labeled Q1 ~ Q2 in Fig. 2-17.
2. Swing the AFT block to the front.
3. Remove the AFT shield and the bottom cover.
4. Remove the AFT circuit board.

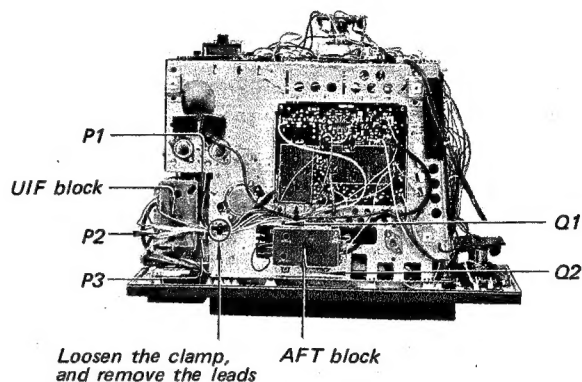


Fig. 2-17.

2-7. PICTURE TUBE REMOVAL

1. Remove the rear cover and the cabinet.
2. Pull off the five control knobs fixed on the upper part of the front panel.
3. Pull off the UHF tuner knob and the UHF dial knob.
4. Unsolder the three leads (two red and one violet) as shown in Fig. 2-18.

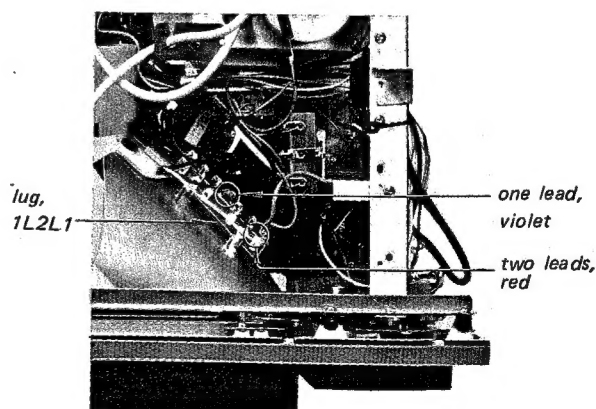


Fig. 2-18.

5. Remove the CD circuit board.
6. Take off the T circuit board from the picture tube.
7. Remove the beam alignment magnet assembly from the picture tube neck, and unsolder the blue lead as shown in Fig. 2-19.
8. Remove the convergence anode cap and the high voltage anode cap from the picture tube. In the convergence anode cap removal, take off the two screws and next the cap by lifting it straight.
9. Unsolder the three horizontal deflection yoke leads (red, green and yellow) as shown in Fig. 2-19.
10. Place the unit rear-side-up on a padded work surface.
11. Unsolder the black lead (grounded to the chassis) on the bottom of the chassis.
12. Unsolder the three leads (white, yellow and green) connected to the secondary terminal of the SOT. See Fig. 2-20.
13. Remove the four screws labeled P1 ~ P4 in Fig. 2-20 and six screws labeled P5 ~ P10 in Fig. 2-21.
14. Remove the chassis by lifting it from the mask assembly.
15. Remove the four nuts labeled Q1 ~ Q4 in Fig. 2-22.
16. Remove the two wing screws in Fig. 2-23, and loosen the clamp screw to take off the deflection yoke.

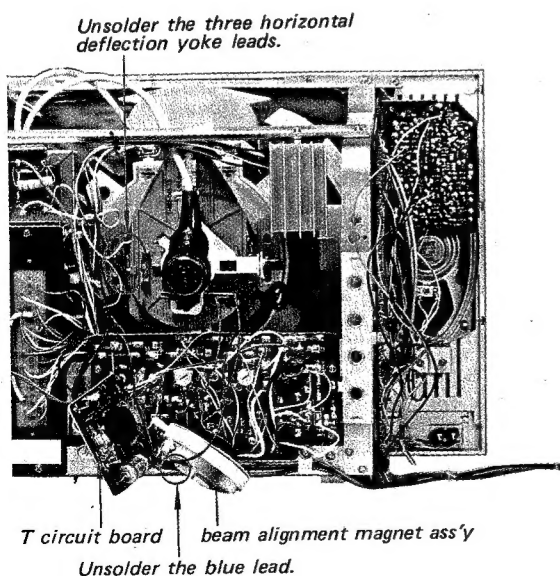


Fig. 2-19.

17. Pull out the picture tube from the mask assembly, and remove the shield cover from the picture tube.
18. Replace the picture tube.

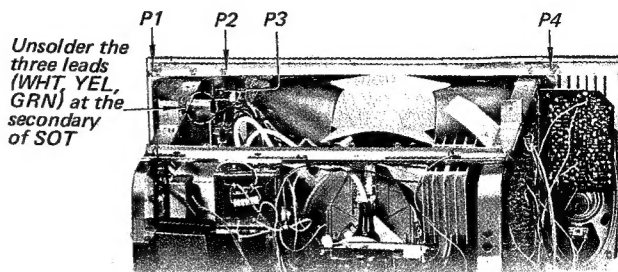


Fig. 2-20.

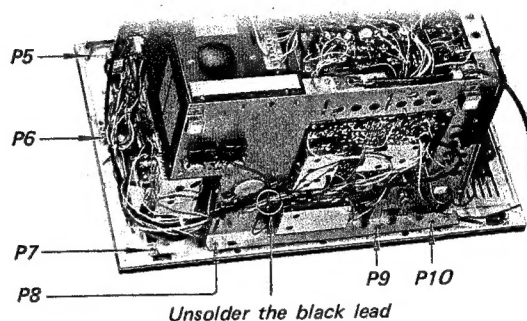


Fig. 2-21.

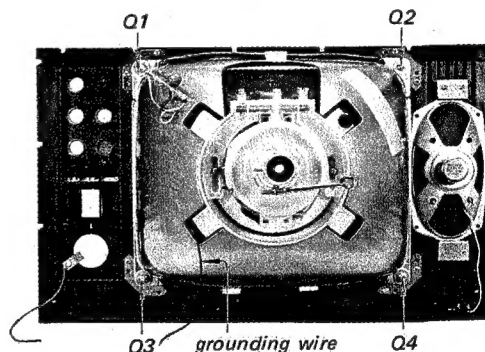


Fig. 2-22.

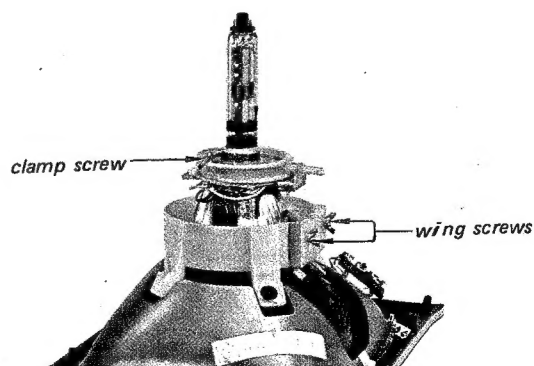


Fig. 2-23.

2-8. PICTURE TUBE INSTALLATION

1. Place the shield cover on the new picture tube. Place the picture tube on the mask assembly.
2. Tighten the four nuts in Fig. 2-22.
3. Install the mask assembly to the chassis, and tighten the four screws labeled P1 ~ P4 in Fig. 2-20 and the six screws labeled P5 ~ P10 in Fig. 2-21.
4. Solder the following leads:
 - a. three leads (white, yellow, green) at the secondary terminal of SOT
 - b. black lead at the bottom of the chassis
 - c. three leads (red, green, yellow) at the horizontal deflection yoke
 - d. blue lead at the beam alignment magnet assembly
 - e. three leads (two red, one violet) at the lug terminal (1L2L1).
5. Install the convergence and high voltage anode caps.
6. Install the beam alignment magnet assembly (BAM) so that the two terminals on the beam alignment magnet assembly are uppermost (twelve-o'clock position).
7. Install T board on the base of the tube.

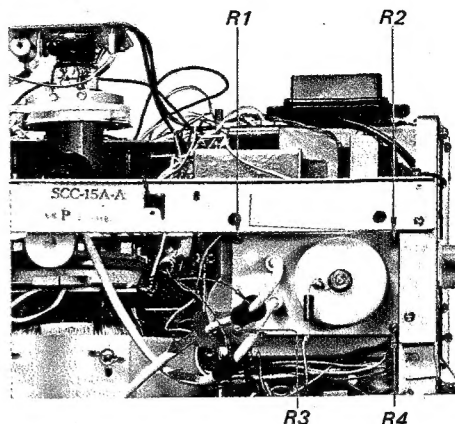
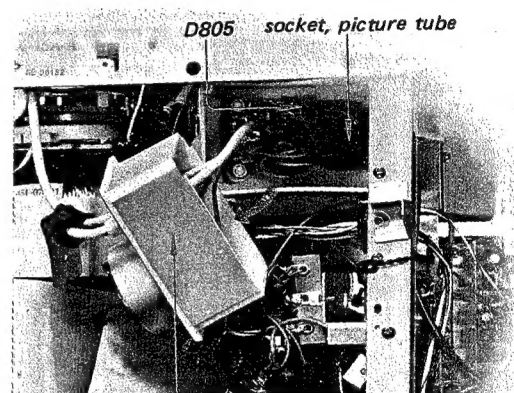


Fig. 2-24.



lid, insulating case

Fig. 2-25.

2-9. FBT & HOT REMOVAL

1. Remove the rear cover and the cabinet.
2. Remove the antenna terminal board.
3. Move the two caps in the direction shown by the arrows in Fig. 2-24.
4. Remove the four screws labeled R1 ~ R4 in Fig. 2-24.
5. Swing the lid of insulating case as shown in Fig. 2-25. This permits access to the components of the convergence circuit and the socket of the rectifier tube.
6. Remove the four screws labeled S1 ~ S4 in Fig. 2-26.
7. Swing the lid of high-voltage cage down as shown in Fig. 2-27.
8. Pull off the cap of the high voltage rectifier tube.

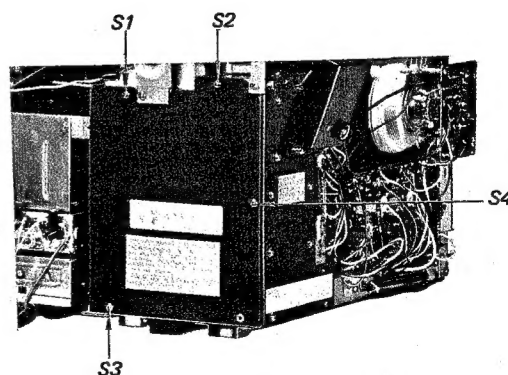


Fig. 2-26.

9. Remove the four screws labeled T1 ~ T4 in Fig. 2-28.
10. Pull off the rear of the high voltage cage as shown in Fig. 2-29.
11. Replace the horizontal output transformer by removing the two screws labeled U1 ~ U2 in Fig. 2-28.
12. Replace the flyback transformer by removing the four screws labeled V1 ~ V4 in Fig. 2-28.

Note: When handling the rectifier tube, put on working gloves.

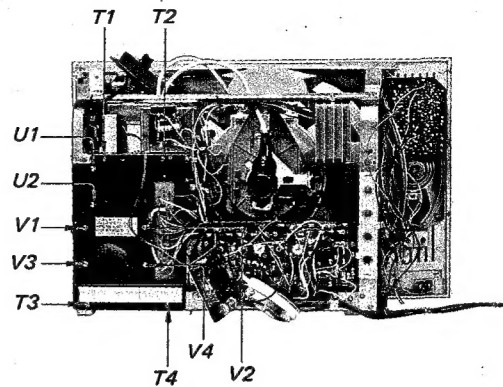


Fig. 2-28.

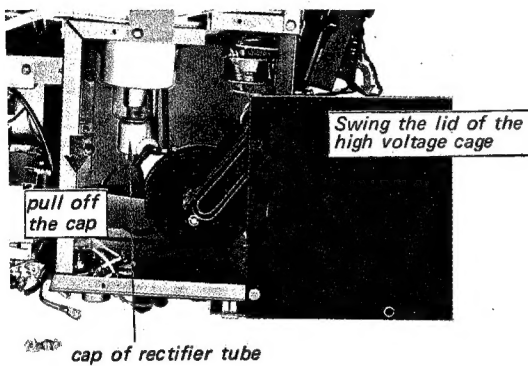


Fig. 2-27.

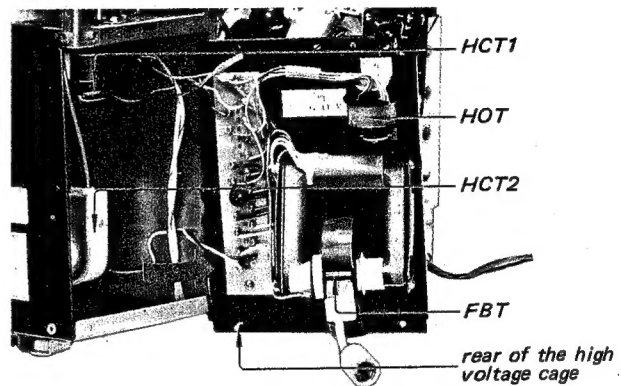


Fig. 2-29.

SECTION 3 SERVICE ADJUSTMENTS

3-1. BEAM LANDING ADJUSTMENTS

Beam landing adjustments are made to ensure correct landing of the three beams on their designated phosphor stripes. Incorrect beam landing at any point on the screen results in colour contamination (a predominant hue) in those particular areas of the screen. Also, this adjustment is used when a complete realignment is needed following picture tube replacement.

Preparation:

1. Receive the dot pattern from the colour-bar generator.
2. Set the horizontal frequency control VR504 and vertical hold control VR906 for correct sync.
3. Set the brightness control at fully clockwise position and the picture control at fully counterclockwise position.

Adjustment Procedure:

1. Face the screen due east or west, and degauss the entire screen area using a degaussing coil.
 2. If misconvergence is found on the screen, adjust the horizontal static control (H-STAT) for best convergence at the centre of the screen.
 3. Set the purity magnet control to the mechanical centre to obtain minimum magnetic field as shown in Fig. 3-1.
 4. Loosen the clamp screw that secures the deflection yoke.
 5. Slide the deflection yoke forward against the funnel of the picture tube.
 6. Pull off the pin-plugs of the red and blue leads on the T board. The screen should appear as shown in Fig. 3-2.
 7. Adjust the purity magnet control to centre the vertical green band on the screen as shown in Fig. 3-3.
 8. Slide the deflection yoke back towards the tube base to obtain a uniform green over the entire screen.
- Note:** In this case, do not set the deflection yoke too far from the funnel of the picture tube.
9. Check red and blue rasters for uniformity, and clamp the deflection yoke in place.

10. If slight mislanding are found, make touch-up adjustments with the purity magnet.
11. If mislanding are found at the four corners, stick a small disk magnet with the double stick tape on the deflection yoke holder. After using the small disk magnet, degauss the entire screen area and make sure that mislanding is not appear on the screen.
12. Push the pin-plugs of the red and blue leads on the T board to produce a white raster.
13. If mislanding is still found, touch up the purity magnet control and the position of the deflection yoke.
14. Face the screen due south or north, and degauss the entire screen area using a degaussing coil.
15. Confirm that no mislanding is found on the screen.

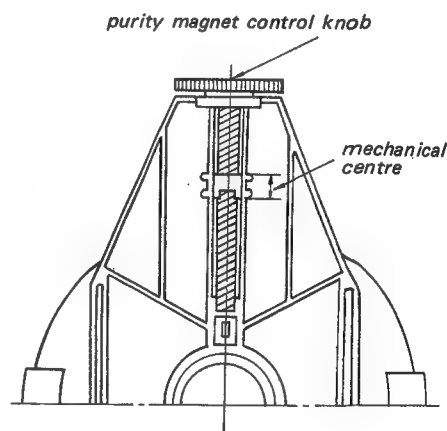


Fig. 3-1.

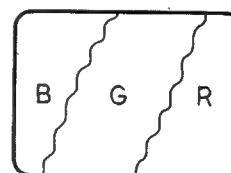


Fig. 3-2.

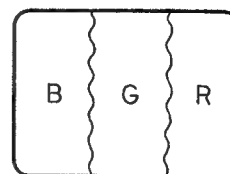


Fig. 3-3.

3-2. CONVERGENCE ADJUSTMENTS

Static Convergence Adjustments

Preparation:

1. Receive the dot pattern from the colour-bar generator.
2. Set the brightness and picture controls to obtain optimum picture on the screen.
3. The landing and white balance adjustments should be completed before starting the convergence adjustments.
4. The following adjustments should be completed:
 - a. Focus adjustments (See page 23)
 - b. Horizontal size adjustments (See page 22)
 - c. Vertical height and linearity adjustments. (See page 23)
 - d. Pincushion correction (See page 23).
5. Take off the horizontal and vertical magnetic convergence (HMC and VMC) controls.

Horizontal Static Convergence

Adjustment Procedure:

1. Adjust the horizontal static convergence control (H STAT) to converge the red dots and the blue dots with the green dots at the centre of the screen. See Fig. 3-4.
2. If the dots do not converge with the green and red dots at the centre of the screen, adjust the horizontal magnetic convergence control (HMC) as necessary. See Fig. 3-5 and Fig. 3-6.

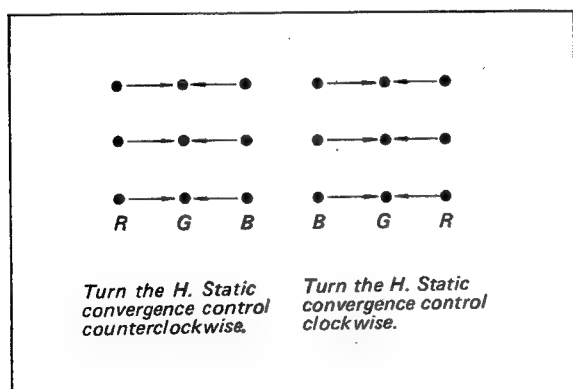


Fig. 3-4.

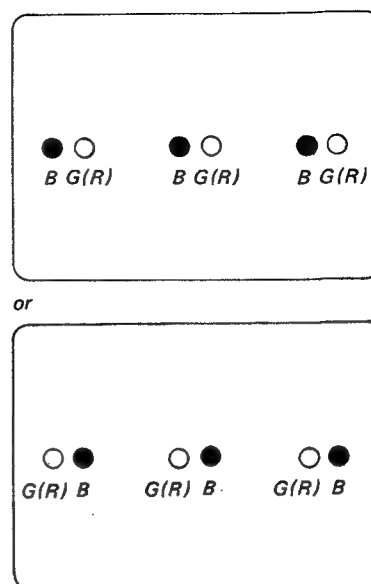


Fig. 3-5.

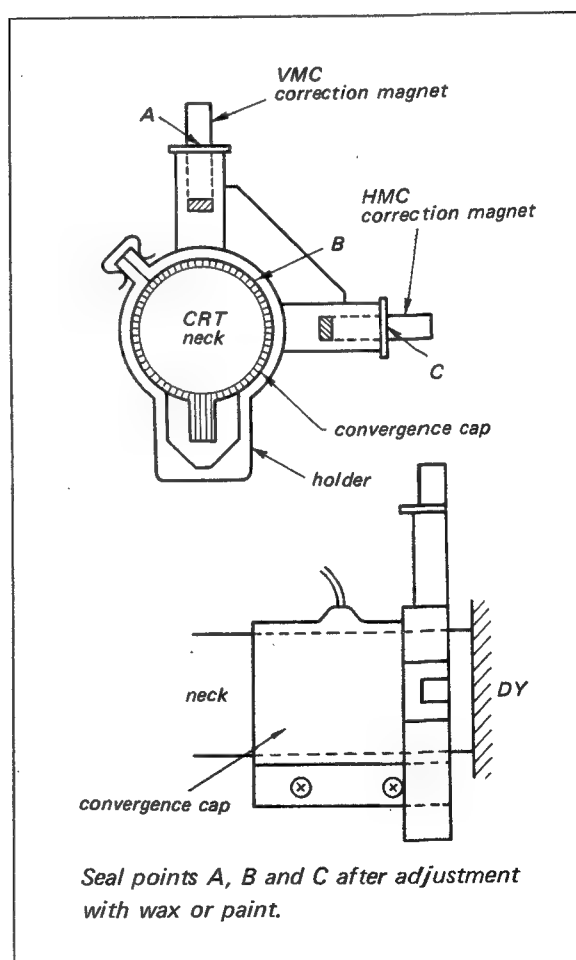


Fig. 3-6.

Vertical Static Convergence

Adjustment Procedure:

1. Spread the two tabs of beam alignment magnet in equal amounts opposite directions to converge red dots and blue dots with green dots. See Fig. 3-7, Fig. 3-8 and Fig. 3-9.
2. If the blue dot does not converge with the green and red dots at the centre of the screen, adjust the vertical magnetic convergence control (VMC) as necessary. See Fig. 3-10.

Note: 1. If it is necessary to correct convergence by using the HMC and VMC controls, mislanding may be found on the screen. Therefore, repeat the landing adjustment.

2. In most cases adjustment of the HMC and VMC controls will not be needed. Therefore, most of the unit have no HMC and VMC.

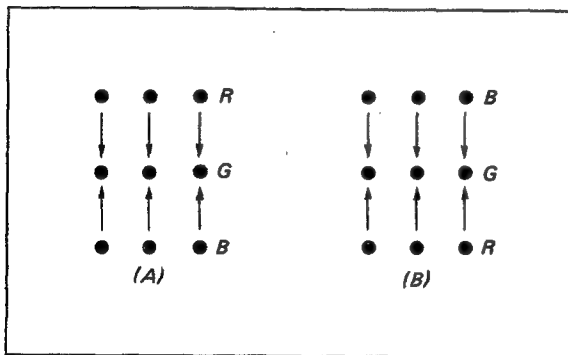


Fig. 3-7.

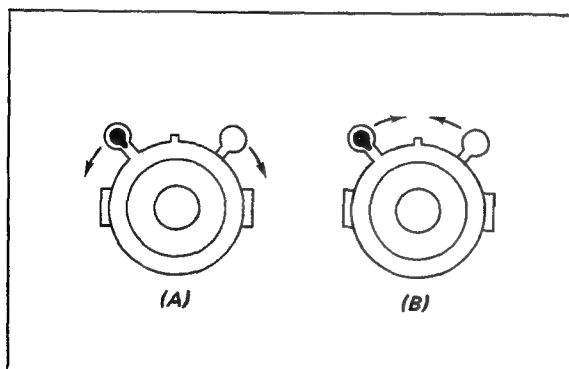


Fig. 3-8.

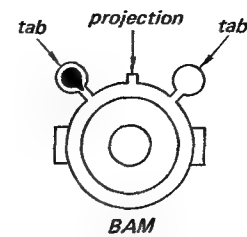
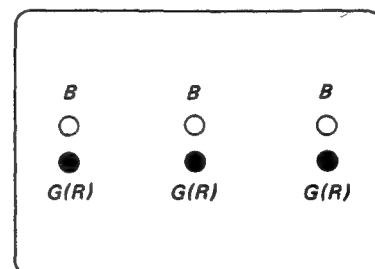


Fig. 3-9.

Note:

1. The two projections are mated with the two tabs.
(It means convergence correcting amount turns to zero.)
2. If the two tabs are not spread in equal amounts opposite direction, dynamic convergence adjustments should be done again.



or

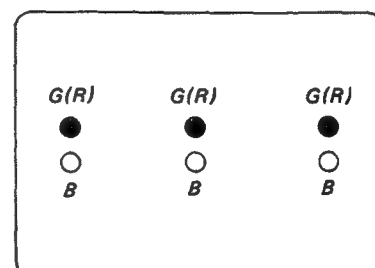


Fig. 3-10.

Dynamic Convergence Adjustments

Adjustment Procedure:

1. Adjust the TILT control (VR604) to obtain the best horizontal convergence at both sides of screen. If correct convergence cannot be obtained, turn the TILT control to display the dot pattern as shown in Fig. 3-11 and Fig. 3-12.
 - a. If misconvergence is as shown in Fig. 3-11, reduce the capacitance value of C611. Try the next smaller commercial value. It will probably be necessary to reset the horizontal static convergence control after C611 has been changed. Readjust the tilt control, if necessary.
 - b. If misconvergence is as shown in Fig. 3-12, increase the capacitance value of C611. Try the next larger commercial value. It will probably be necessary to reset the horizontal static convergence control after C611 has been changed. Readjust the tilt control, if necessary.

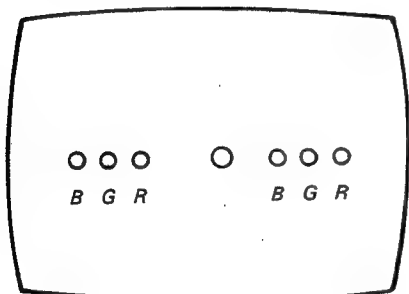


Fig. 3-11.

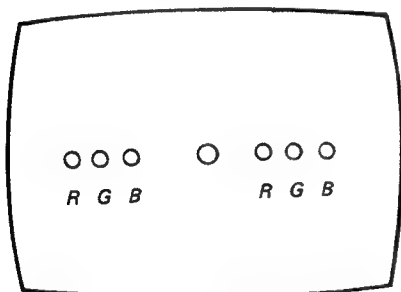


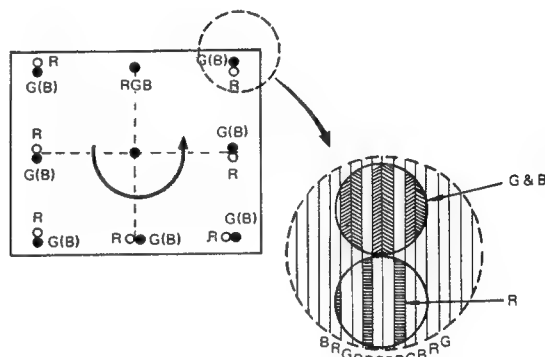
Fig. 3-12.

Screen-edge Convergence Adjustments

Adjustment Procedure:

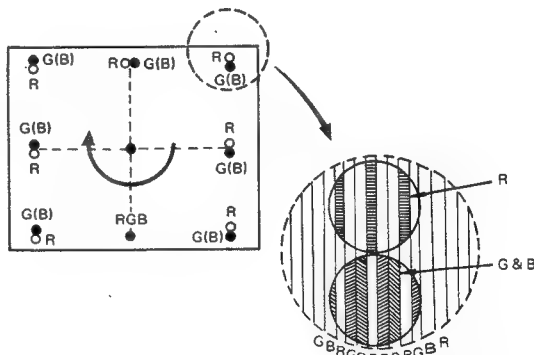
If the conditions shown in Fig. 3-13 and Fig. 3-14 are observed, raise or lower the front edge of the deflection yoke to obtain the best vertical convergence at the screen edges.

Note: Confirm that no mislanding is appeared on the screen. If mislanding is found on the screen, repeat the landing adjustment procedure.



To correct this condition (to move the red dot as indicated by the arrow), raise the front edge of the yoke.

Fig. 3-13.



To correct this condition (to move the red dot as indicated by the arrow), lower the front edge of the yoke.

Fig. 3-14.

Movement of Deflection Yoke

1. Loosen the two screws labeled A and B in Fig. 3-15.
2. Loosen the clamp band labeled C in Fig. 3-16.
3. Raise or lower the front edge of the deflection yoke while taking care not to move the yoke forward or backward.
4. Secure the yoke in position by tightening the screws labeled A and B in Fig. 3-15. Tighten the clamp band.

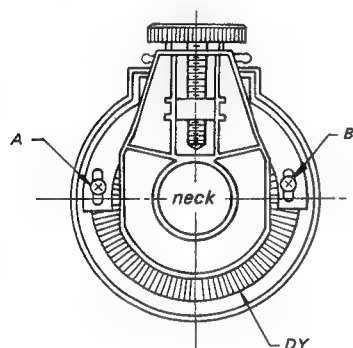


Fig. 3-15.

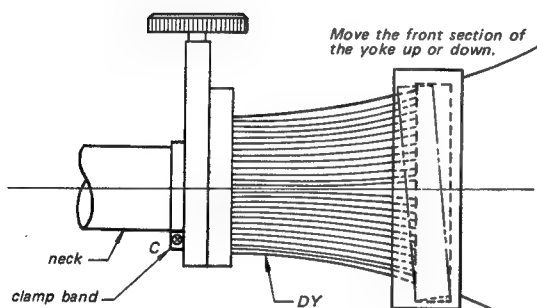


Fig. 3-16.

3-3. WHITE BALANCE ADJUSTMENTS

Preparation:

1. Receive the crosshatch signal from the colour-bar generator.
2. Set the horizontal frequency control VR504 and vertical hold control for correct control.

Adjustment Procedure:

Low-level White Balance Adjustments

1. Turn the brightness control and picture control to the fully counterclockwise position.
2. Turn the screen (SCRN) control VR602 on the P board to obtain a dark screen.
3. Set all three (red, green and blue) background controls (VR456, VR455 and VR454) to the mechanical centre.
4. Turn all three (red, green and blue) drive controls (VR453, VR452 and VR451) to the fully clockwise position (maximum brightness position).
5. Turn the screen control clockwise slowly and note the hue (red, green or blue) of the crosshatches that become faintly visible first.
6. Adjust the two background controls for other two colours to obtain optimum white balance (neutral grey).
7. Turn the brightness and picture controls clockwise about 60 degrees.
8. Confirm that optimum white balance is obtained, and if necessary, readjust the two background controls that was adjusted in step 6 to obtain optimum white balance.

High Level White Balance Adjustments

1. Set the brightness and picture controls to the fully clockwise position.
2. Adjust the all three (red, green and blue) drive controls to obtain optimum white balance.
3. Turn the brightness and picture controls to the fully counterclockwise position.
4. Confirm that optimum white balance is obtained at low level.
5. Repeat the adjustments for low and high level white balance two or three times.

SECTION 4
CIRCUIT ADJUSTMENTS

4-1. VIDEO IF ALIGNMENTS

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
UHF i-f response curve adjustment	<ol style="list-style-type: none">1. Pull out the IF OUT phono plug from UHF tuner. See Fig. 4-1.2. Connect a sweep generator to UHF IF input terminal through a network shown in Fig. 4-2.3. Connect a scope to the base of Q752 through a network shown in Fig. 4-3.4. Loosely couple the output of the marker generator to the output of sweep generator.	UIFT-1 (T751) UIFT-2 (T752)	<ol style="list-style-type: none">1. Adjust the output level of sweep generator to obtain 10 mVp-p on the scope.2. Adjust the two transformers UIFT-1 and UIFT-2 until the picture i-f carrier point is at the same level as the colour-sub-carrier point.

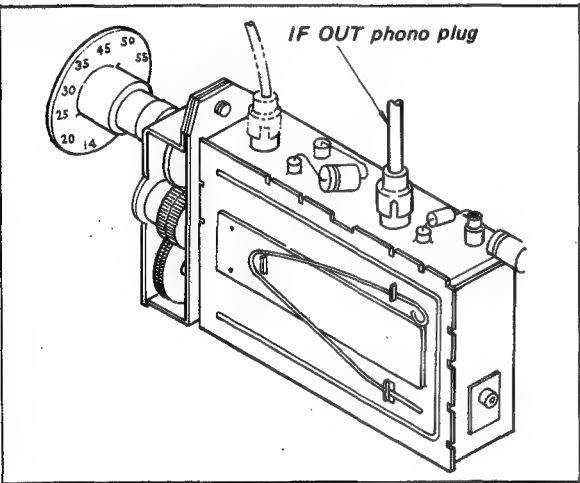


Fig. 4-1.

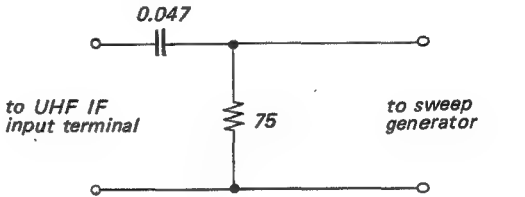


Fig. 4-2.

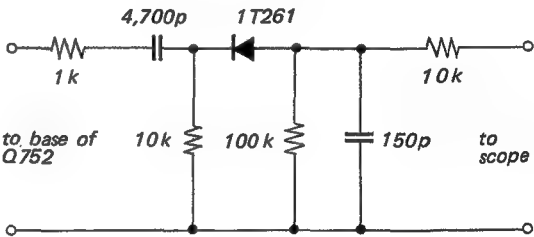


Fig. 4-3.

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
Collector current I_c adjustment of Q201	1. Pull off the uhf phono plug from the uhf tuner. 2. Turn the agc control VR203 fully counterclockwise (maximum gain) as viewed from conductor side. 3. Connect a 100k-ohm rheostat across resistor R250. 4. Connect a sweep generator to the UHF-IF input terminal through an attenuator and the network as shown in Fig. 4-4. 5. Loosely couple the output of the marker generator to the output of sweep generator. 6. Connect a scope to the emitter of Q204.	100k-ohm rheostat	1. Set the 100k-ohm rheostat for the value of 100k ohms. 2. Set the output level of sweep generator to obtain 1.0Vp-p on the scope. 3. Remove the attenuator and then adjust the rheostat to obtain 1.0Vp-p on the scope.
VIFT-2 and VIFT-3 adjustments		VIFT-2 (T205) VIFT-3 (T206)	1. Turn the core of VIFT-2 and VIFT-3 for maximum distance between marker and base-line at the 37.00 MHz marker point.
Adjustment of level of the picture and chroma carriers		VIFT-1 VIFT-3 CV201	1. Adjust VIFT-1 until the 39.50 MHz marker point is at the same level at the 35.07 MHz marker point. 2. Adjust the CV201 and VIFT-3 to position both marker points of 39.50 MHz and 35.07 MHz markers at 50%(6dB) below the peak of curve.
Trap adjustment		VIFT-T1 VIFT-T2 VIFT-T3 VIFT-T4 VR202	1. Adjust VIFT-T1, VIFT-T2, VIFT-T3 and VIFT-T4 to obtain a standard response curve as shown in Fig. 4-5. VIFT-T1 : 41.50 MHz VIFT-T2 : 33.50 MHz VIFT-T3 : 31.50 MHz VIFT-T4 : 33.50 MHz 2. Adjust VR202 for minimum distance between 33.50 MHz marker and base-line on the response curve. 3. Repeat the above items two or three times.
Overall check		VIFT-2 VIFT-3 100k-ohm rheostat	1. Confirm that the top of the curve moves up and down* by turning the cores of VIFT-2 and VIFT-3. (* top of waveform tilts to right or left.)

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
			2. If the curve does not tilt, readjust the above items. 3. Change the output level of the sweep generator while keeping the emitter output level of Q204 at 1.0 Vp-p constant with the 100k-ohm rheostat. 4. Confirm that the tilt of curve does not exceed the following value. Difference of level between picture carrier (39.50 MHz) and chroma carrier (35.07 MHz) . . . within 20% Tilt of top of curve . . . within 30%

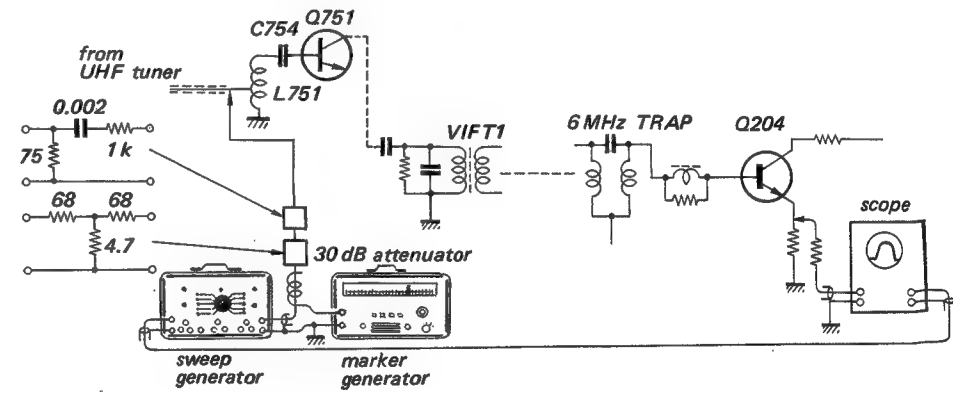


Fig. 4-4.

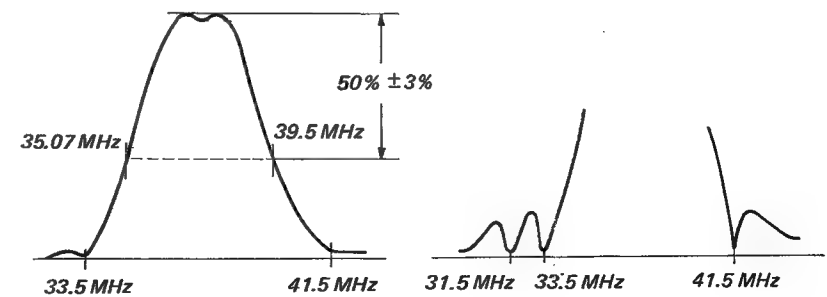


Fig. 4-5.

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
Detector output adjustment	1. Remove the 100k-ohm rheostat. 2. Push in the UHF-IF phono plug to UHF tuner. 3. Connect a scope to the emitter of Q204. 4. Receive a strong off-the-air signal (55 ~ 75 dB).	VR203	1. Adjust the agc control VR203 to obtain 1.4 Vp-p from black level to white level.
Tuner agc adjustment		VR201	1. Receive an off-the-air signal. 2. Adjust the tuner agc control VR201 for minimum noise (snow) and crossmodulation. Check each channel. Check operation with strong local signals.
6.0 MHz trap adjustment	1. Receive an off-the-air signal. 2. Set the AFT switch to OFF position. 3. Set the UHF tuner knob for just tuning position, then turn it clockwise little by little to obtain 6.0 MHz beat clearly.	T209	1. Adjust T209 to minimize the 6.0 MHz beat on the screen.

4-2. SOUND IF ALIGNMENTS

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
SIFT-1 and SIFT-2 adjustments	1. Turn the volume control VR901 fully counterclockwise. 2. Connect a 100k-ohm rheostat across R250, and set the 100k-ohm rheostat to make all video disappear from the picture tube (blank raster). 3. Connect a scope to the hot terminal of volume control VR901. 4. Connect a sweep generator to the junction point of L211 and C250 through the network shown in Fig. 4-6. 5. Loosely couple the marker generator to the output lead of the sweep generator.	SIFT-1 SIFT-2	1. Set the marker generator to 6.0 MHz. 2. Turn up the sweep output to produce an S curve. 3. Adjust the cores of SIFT-1 and SIFT-2 for maximum deflection and to make the S curve symmetrical on the scope.
SIFT-3 adjustment	1. Remove the 100k-ohm rheostat which is connected across R250. 2. Receive the off-the-air signal. 3. Connect a VOM between the terminals 5 and 6 of IC-201.	SIFT-3	1. Turn the core of SIFT-3 to obtain 0V on the VOM.

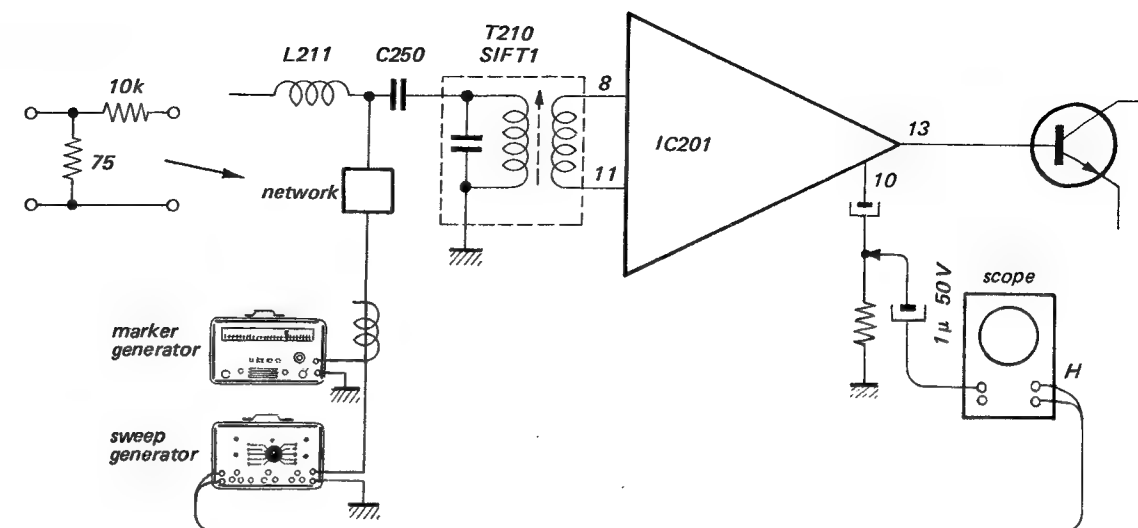


Fig. 4-6.

4-3. AUTOMATIC FINE TUNING (AFT) ADJUSTMENTS

There are two service methods in the AFT adjustments. One is Factory Service method and the other is Field Service Method.

Field Service Method

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
AFT adjustment	1. Receive the off-the-air signal with reasonable signal to noise (S/N) ratio. 2. Adjust the vertical hold and horizontal frequency controls for correct sync. 3. Adjust brightness and picture controls to obtain the best picture. 4. Set the AFT switch to OFF position.	T152	1. Turn the UHF tuner knob clockwise to obtain 1.57 MHz beat on the screen. 2. Eliminate 1.57 MHz beat stripe by turning the UHF tuner knob counterclockwise slowly. 3. Set the AFT switch to ON position. 4. Adjust T152 to eliminate 1.57 MHz beat stripe at the same tuning point on step 2.

Factory Service Method

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
T152 adjustment	1. Set the channel selector to the inactive channel. 2. Connect antenna input terminal to ground with short jumper wire. 3. Set the AFT switch to OFF position.	T152	1. Connect a scope to terminal 8 on AFT block. See Fig. 4-7. 2. Turn up sweep output to produce an S curve at 39 MHz. 3. Set the marker generator to 39.50 MHz.

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
	4. Connect a sweep generator to the UHF-IF input terminal. 5. Loosely couple the marker generator to the output lead of the sweep generator.		4. Adjust the core of T152 until 39.50 MHz marker point positions at the centre of S curve.
T151 adjustment		T151	1. Connect a scope to the emitter of Q204. 2. Set the marker generator to 39.50 MHz. 3. Adjust the sweep output level until 39.50 MHz marker point indicates 0.4 ~ 0.6 V(p-p) on the scope. See Fig. 4-8. 4. Change the connection of scope to terminal 8 on AFT block. 5. Adjust the core of T151 for maximum deflection and to make the S curve symmetrical on the scope. See Fig. 4-9. 6. Decrease the output level of sweep generator by about 10 dB. 7. Adjust the core of T151 for maximum deflection and to make the S curve symmetrical on the scope. 8. Increase sweep output level by about 10 dB, and make sure that the S curve does not change. 9. Change the connecting point of scope to terminal 7 on AFT block. 10. Make sure that opposite S curve is obtained on the scope. If it is not obtained, readjust the core of T151.

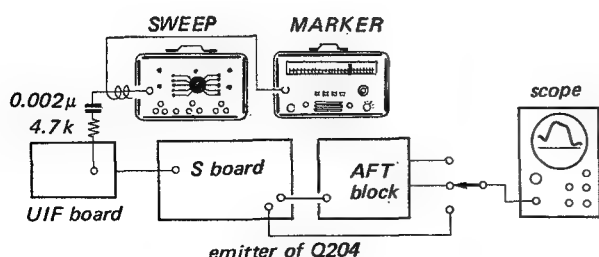


Fig. 4-7.

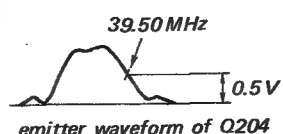


Fig. 4-8.

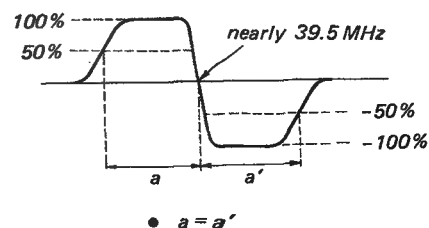
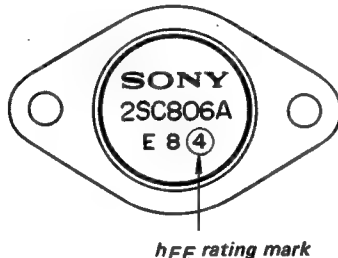


Fig. 4-9.

4.4. DEFLECTION CIRCUIT ADJUSTMENTS

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES																		
115V line adjustment	<ol style="list-style-type: none">1. Receive an off-the-air signal.2. Set the vertical hold and horizontal frequency controls for correct sync.3. Set the brightness and picture controls to obtain optimum picture on the screen.4. Connect a VOM to the terminal 17 on the P board (115V line).	VR601	<ol style="list-style-type: none">1. Adjust VR601 to obtain 113V to 117V on the VOM.																		
Horizontal frequency & HSC adjustment	<ol style="list-style-type: none">1. Receive an off-the-air signal.2. Short the base of sync split Q503 to ground with a 0.05μF capacitor.3. Set the picture and brightness controls for optimum picture.4. Short-circuit horizontal stabilizing coil HSC.	VR504 (H. FREQ) L501 (HSC)	<ol style="list-style-type: none">1. Turn VR504 to obtain a single upright picture that "floats" from side to side or note the two settings that produce equal numbers of slanting bars and set VR504 in the centre of these settings.2. Remove the short-circuit from HSC.3. Adjust the HSC to give a slowly moving picture in horizontal direction. Disconnect the 0.05μF capacitor which is connected between base of Q503 and ground. Confirm that the picture is locked on the screen.																		
Horizontal pulse width adjustment	<ol style="list-style-type: none">1. Receive an off-the-air signal.2. Connect a scope to the emitter of Q504.	C525	<ol style="list-style-type: none">1. Select values for C525 to obtain the pulse width of 11.5 to 12.5 μ sec.																		
Horizontal output and horizontal converter drive adjustment		R540 R541	<p>If a horizontal output transistor has been replaced, change R540 according to the hFE rating of transistor as shown in the table below.</p> <table><tr><th>Q801 hFE rating</th><th>R540</th></tr><tr><td>-4</td><td>27</td></tr><tr><td>-5</td><td>33</td></tr><tr><td>2SC806A-6</td><td>43</td></tr><tr><td>-7</td><td>43</td></tr></table> <p>If a horizontal converter transistor has been replaced, change R541 according to the hFE rating of transistor as shown in the table below.</p> <table><tr><th>Q802 hFE rating</th><th>R541</th></tr><tr><td>-4</td><td>27</td></tr><tr><td>2SC806A-5</td><td>33</td></tr><tr><td>-6</td><td>43</td></tr></table>	Q801 hFE rating	R540	-4	27	-5	33	2SC806A-6	43	-7	43	Q802 hFE rating	R541	-4	27	2SC806A-5	33	-6	43
Q801 hFE rating	R540																				
-4	27																				
-5	33																				
2SC806A-6	43																				
-7	43																				
Q802 hFE rating	R541																				
-4	27																				
2SC806A-5	33																				
-6	43																				

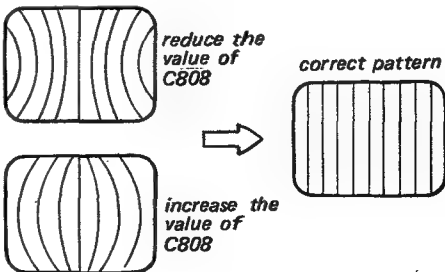
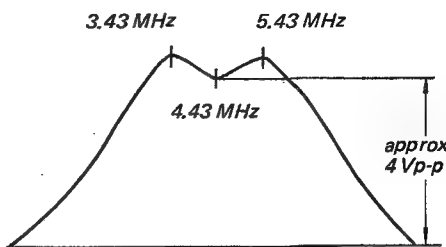
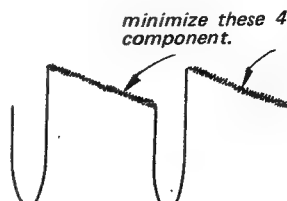
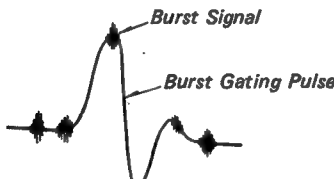
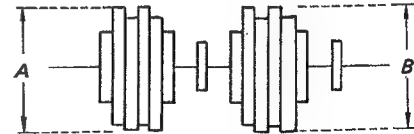
ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
Horizontal centring adjustment	1. Receive the test pattern signal. 2. Adjust vertical hold and horizontal frequency controls for correct sync. 3. Set the brightness and picture controls to obtain optimum picture on the screen.	VR603	1. Adjust the horizontal centring control VR603 to the centre of pattern at the centre of screen.
Horizontal size adjustment		L601	1. Adjust L601 until outside circle of test pattern are in contact with the edge of picture tube.
Focus adjustment	1. Receive an off-the-air signal. 2. Set the vertical hold and horizontal frequency controls for correct sync. 3. Set the brightness and picture controls to obtain optimum picture on the screen.		1. Try to connect the focus lead (white) at each of the connecting points on the P board. 2. Connect permanently at the point where gives best focus.
Vertical bias adjustment	1. Receive the test pattern signal. 2. Set the vertical hold and horizontal frequency controls for correct sync. 3. Set the brightness and picture controls to fully counterclockwise position.	VR503	1. Connect a VOM to the emitter of Q901. 2. Adjust VR503 to obtain 7.0V on the VOM.
Vertical centring adjustment		VR605	1. Adjust VR605 to locate the centre of picture at the centre of the screen while observing the picture.
Vertical height and linearity adjustment		VR501 VR502	1. Adjust the vertical height control VR501 and linearity control VR502 for optimum height and linearity.
Pincushion correction adjustment	1. Receive a crosshatch signal from colour-bar generator. 2. Set the vertical hold and horizontal frequency controls for correct sync. 3. Adjust the brightness control until the crosshatch becomes faintly visible on the screen. 4. Set the picture control to fully counterclockwise position (minimum position).	C808	1. Select the value of C808 for the best picture. See Fig. 4-10. 

Fig. 4-10.

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
BPT-2 adjustment	<ol style="list-style-type: none"> 1. Set the channel selector to the highest inactive channel in the area. 2. Short the base of colour killer amplifier Q316 to ground with a short jumper wire. 3. Connect a dc bias box to the base of ACC transistor Q302. 4. Adjust the dc bias box to supply 0.7V to the base of Q302 shown in Fig. 4-11. 5. Set the AFT switch to OFF position. 6. Turn the picture control fully clockwise and colour control to midrange. 7. Connect a sweep generator to the terminal 7 on DC board through a network shown in Fig. 4-12. 8. Connect a scope to secondary of 2nd bandpass transformer BPT-2 through a network shown in Fig. 4-13. 	BPT-2 (T307)	<ol style="list-style-type: none"> 1. Adjust the core of BPT-2 to obtain the response curve shown in Fig. 4-14.  <p style="text-align: center;">Fig. 4-14.</p>
ACC adjustment	<ol style="list-style-type: none"> 1. Receive the colour-bar signal from the colour-bar generator. 2. Adjust the vertical hold and horizontal frequency controls for correct sync. 3. Connect a scope to the emitter of Q204. 4. Connect another scope to the secondary of 1st bandpass transformer BPT-1. 	VR302 (ACC)	<ol style="list-style-type: none"> 1. Adjust the colour-bar generator to produce a burst signal of 0.2V(p-p) on the scope at emitter of Q204. 2. Adjust ACC control (VR-302) to produce a colour burst signal of 0.5V(p-p) at the secondary of BPT-1.
4.43 MHz oscillator adjustment	<ol style="list-style-type: none"> 1. Receive the colour-bar signal from the colour-bar generator. 2. Adjust the vertical hold and horizontal frequency controls for correct sync. 3. Set the hue control VR905 to the mechanical centre. 	COT-1 (T304)	<ol style="list-style-type: none"> 1. Short the base of Q314 to ground with short jumper. 2. Adjust the core of COT-1 to synchronize the colour in the display and for minimum colour beat in the picture.
		COT-2 (T306)	<ol style="list-style-type: none"> 1. Short the base of Q310 to ground with short jumper. 2. Adjust the core of COT-2 to synchronize the colour in the display and for minimum colour beat in the picture. <p>Perform the adjustment of COT-1 and COT-2 several times.</p>

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
4.43 MHz trap coil adjustment	<ol style="list-style-type: none"> 1. Receive the colour-bar signal from the colour-bar generator. 2. Set the vertical hold and the horizontal frequency controls for correct sync. 3. Turn the colour control knob fully counterclockwise and the picture control knob fully clockwise. 4. Connect a scope to the emitter of Q452 (Y DRIVE). 	L451 (4.43 MHz trap)	<ol style="list-style-type: none"> 1. Adjust the trap coil L451 to minimize 4.43 MHz component on the waveform shown in Fig. 4-15.  <p>Fig. 4-15.</p>
Burst amplifier adjustment	<ol style="list-style-type: none"> 1. Receive the colour-bar signal from the colour-bar generator. 2. Adjust the vertical hold and horizontal frequency controls for correct sync. 3. Connect a scope to the base of burst amplifier (Q308 and Q312) and check that the burst signal rides around atop the burst gate pulse as shown in Fig. 4-16. 4. Connect a dc bias box across capacitor C308.  <p>Fig. 4-16.</p>	VR301	<ol style="list-style-type: none"> 1. Connect a scope to the secondary of 1st burst amp transformer BAT-1. 2. Adjust the dc bias box until the burst signal is obtained less than 10 V(p-p) waveform on the scope. 3. Adjust the core of BAT-1 to obtain maximum burst signal on the scope. 4. Connect a scope to the secondary of the 2nd burst amp transformer BAT-2. 5. Adjust the core of BAT-2 to obtain maximum burst signal on the scope.
Delay level adjustment	<ol style="list-style-type: none"> 1. Receive the colour-bar signal from the colour-bar generator. 2. Adjust the vertical hold and horizontal frequency controls for correct sync. 3. Set the hue control VR905 to the mechanical centre. 4. Turn the colour control fully clockwise, and then turn it counterclockwise about 90 degrees. 5. Connect a scope to the secondary of 2nd bandpass transformer BPT-2. 	BAT-1 (T303) BAT-2 (T305)	<ol style="list-style-type: none"> 1. Adjust VR301 to obtain the same level between direct colour signal and 1-H delayed colour signal. See Fig. 4-17.  <p>Fig. 4-17.</p>

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
Hue adjustment	<ol style="list-style-type: none"> 1. Receive the colour-bar signal from the colour-bar generator. 2. Adjust the vertical hold and horizontal frequency controls for correct sync. 3. Set the hue control VR905 to the mechanical centre. 4. Turn the colour control fully clockwise, and then turn it counterclockwise about 90 degrees. 	BAT-1 (T303) BAT-2 (T305) DAC (L301)	<ol style="list-style-type: none"> 1. Connect a scope to the base of Q320. 2. Adjust L301 to obtain the same amplitude level between direct colour signal and 1-H delayed colour signal. 3. Adjust the 2nd burst amp transformer BAT-2 to obtain R-Y waveform as shown in Fig. 4-18. 4. Connect a scope to the base of Q318. 5. Adjust the 1st burst amp transformer BAT-1 to obtain B-Y waveform as shown in Fig. 4-18. 6. Repeat steps 1 to 5 two or three times for best waveform.

Note: The hue adjustment has a great effect on both delay level adjustment and burst amp adjustment. Therefore, perform the adjustment in following order.

1. burst amp
2. delay level
3. hue adjustment

Hue control range check		HAT (T951)	<ol style="list-style-type: none"> 1. Check that the optimum colour-bar picture appears on the screen as shown in Fig. 4-19. If the optimum colour-bar picture is not appeared on the screen, adjust the core of HAT slightly.
-------------------------	--	------------	---

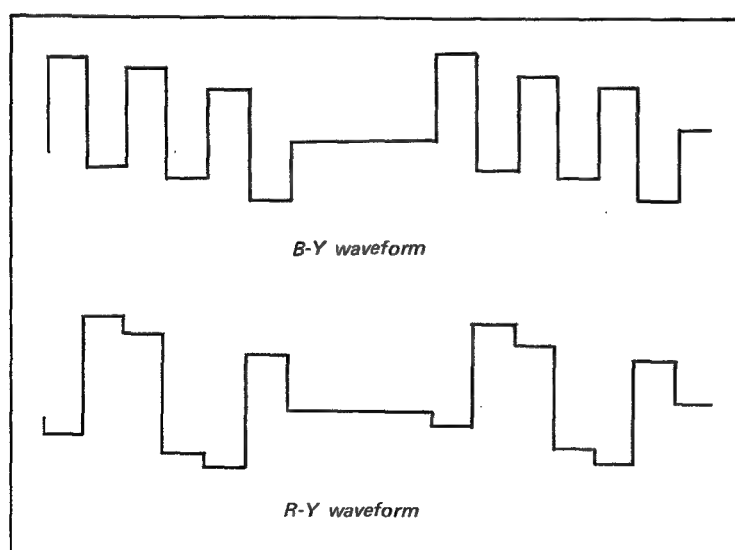


Fig. 4-18.

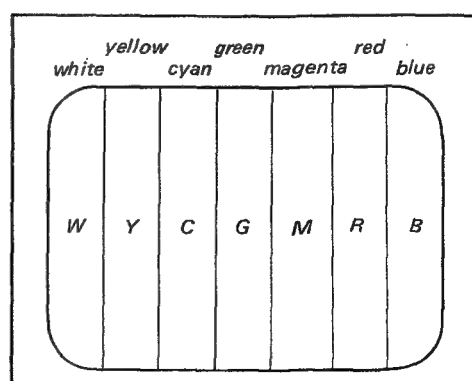


Fig. 4-19.

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
ID adjustment	<ol style="list-style-type: none"> 1. Receive the colour-bar signal from the colour-bar generator. 2. Connect a bias box to the base of Q702, and supply 0.5V to 0.7V. 3. Turn VR702 fully counterclockwise position as viewed from conductor side. 	T701 (BAT-3) T701 T702	<ol style="list-style-type: none"> 1. Connect a scope to secondary of T701. 2. Adjust T701 until the burst signal indicates maximum amplitude on the scope. 3. Connect a scope to the base of Q704. 4. Connect a trigger input terminal of scope to primary of vertical output transformer VOT. 5. Adjust VR701 to obtain 4V(p-p) on the scope. 6. Adjust VR702 until the 2nd keying pulse counted from left is located at the same position of positive differential pulse shown in Fig. 4-20.

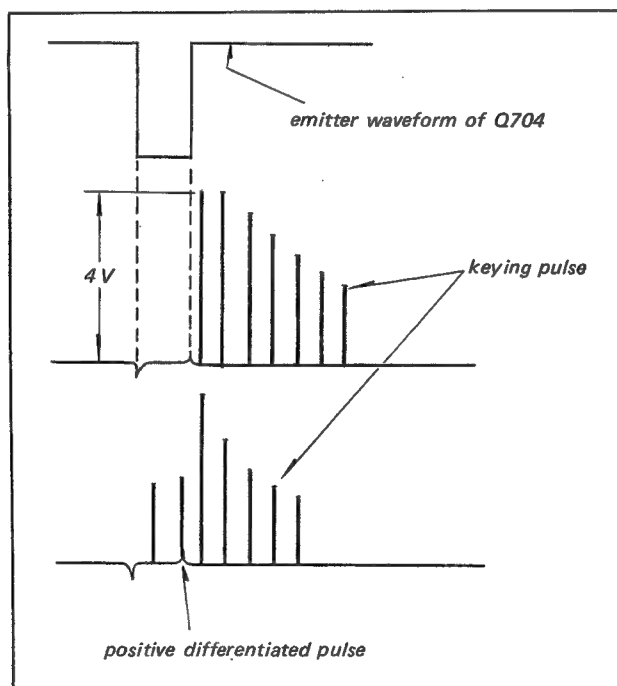
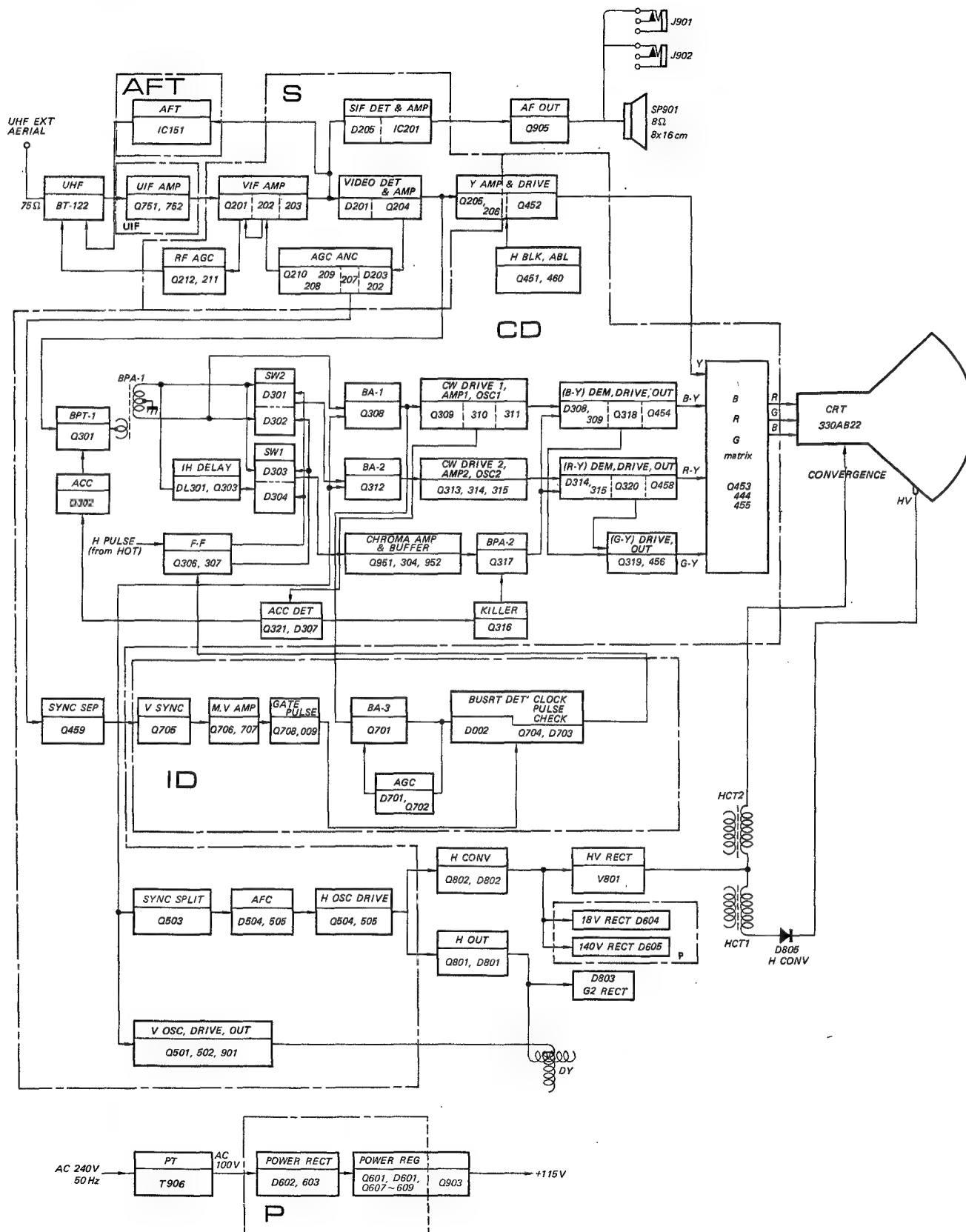


Fig. 4-20.

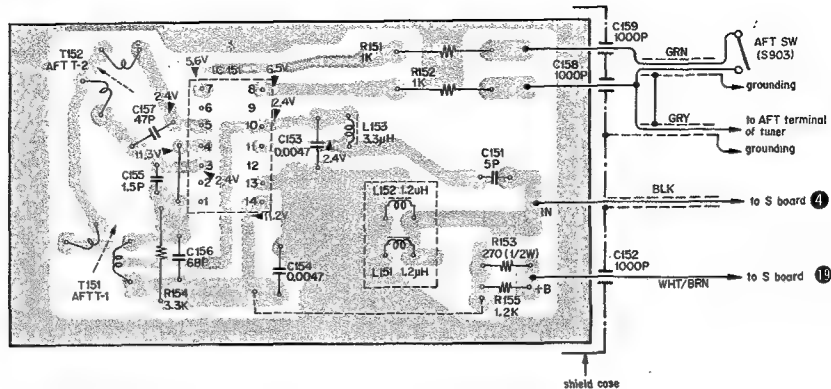
BLOCK DIAGRAM



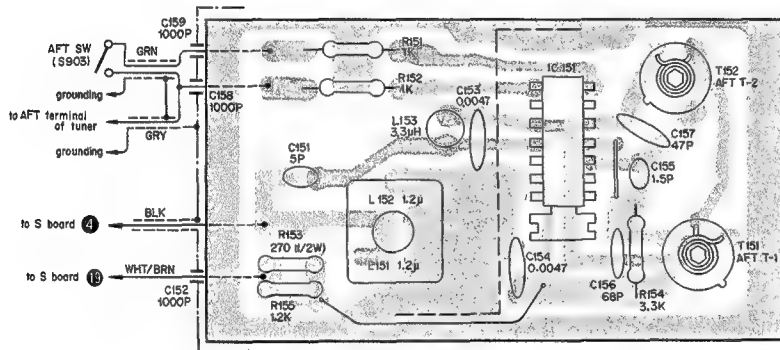
MOUNTING DIAGRAM

AFT Circuit Board

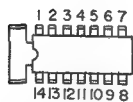
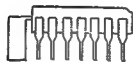
– Conductor Side –



— Component Side —



1C151

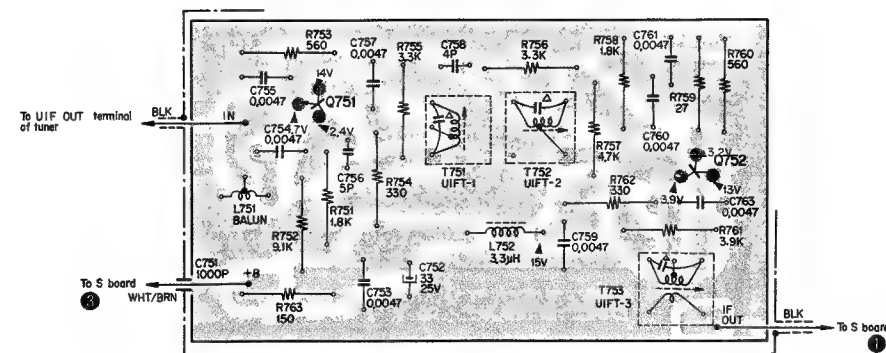


bottom view

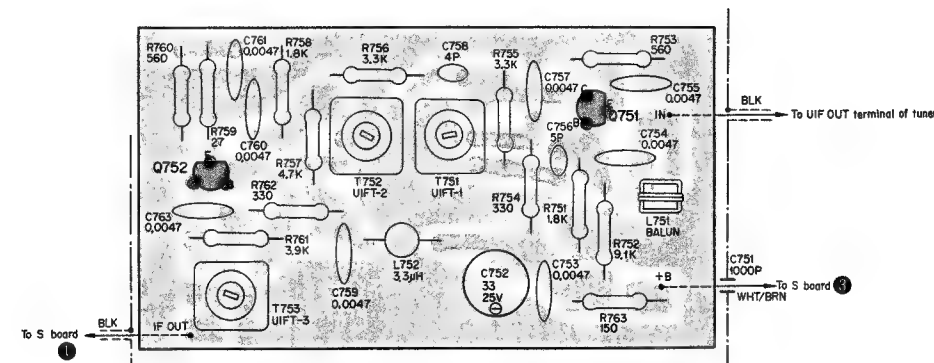
MOUNTING DIAGRAM

UIF Circuit Board

— Conductor Side —



— Component Side —



Q751 2SC1128
Q752

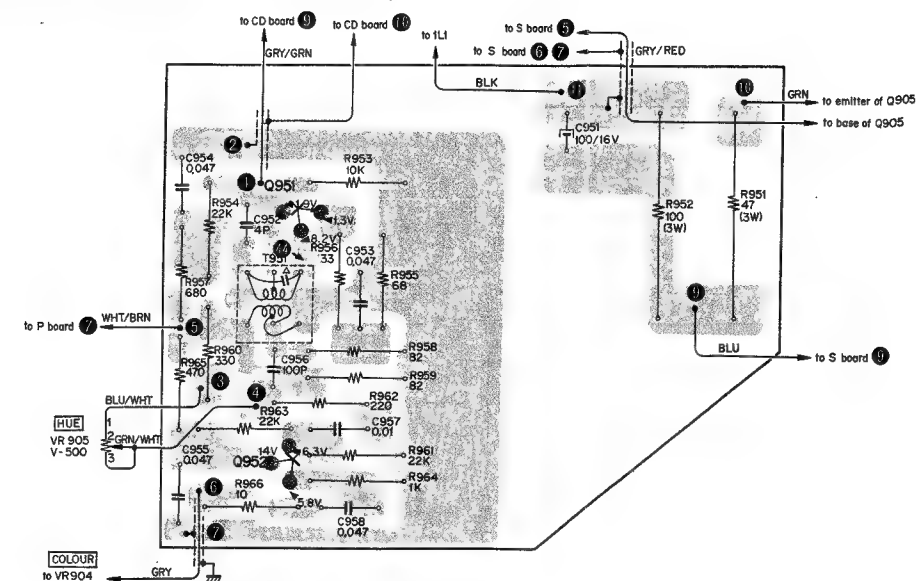


Note: Δ marks show the internal components of transformers.

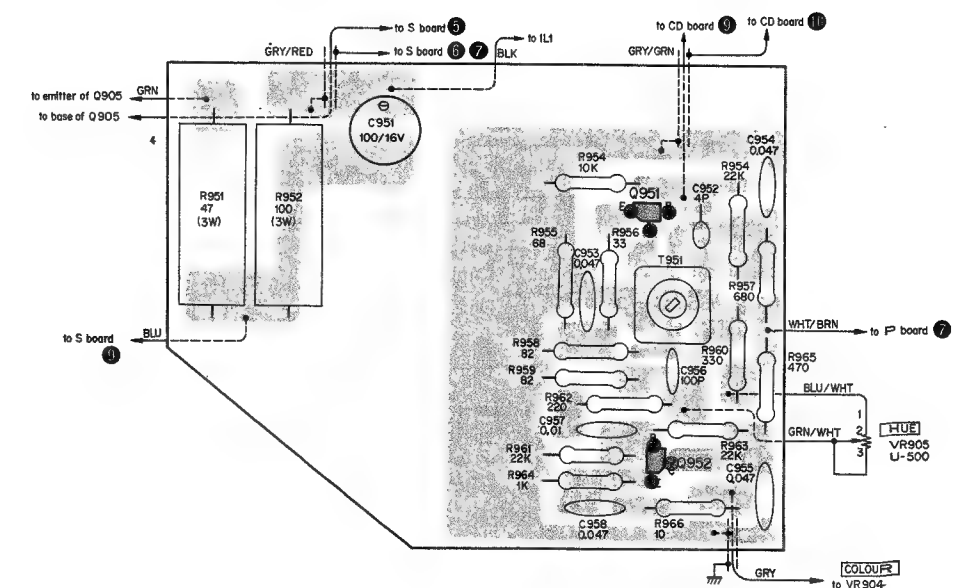
MOUNTING DIAGRAM

HA Circuit Board

— Conductor Side —



— Component Side —



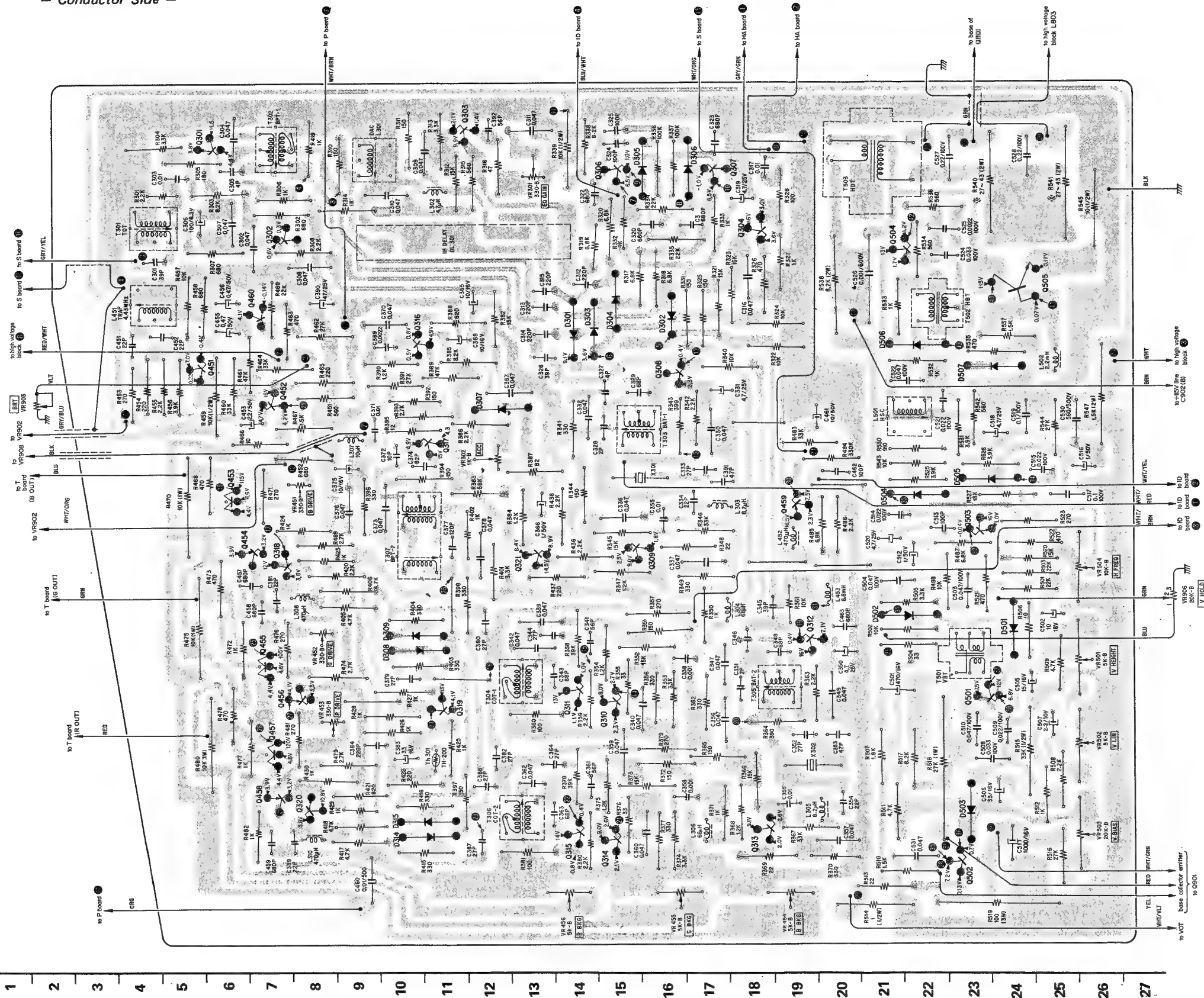
Q951 2SC403C
Q952



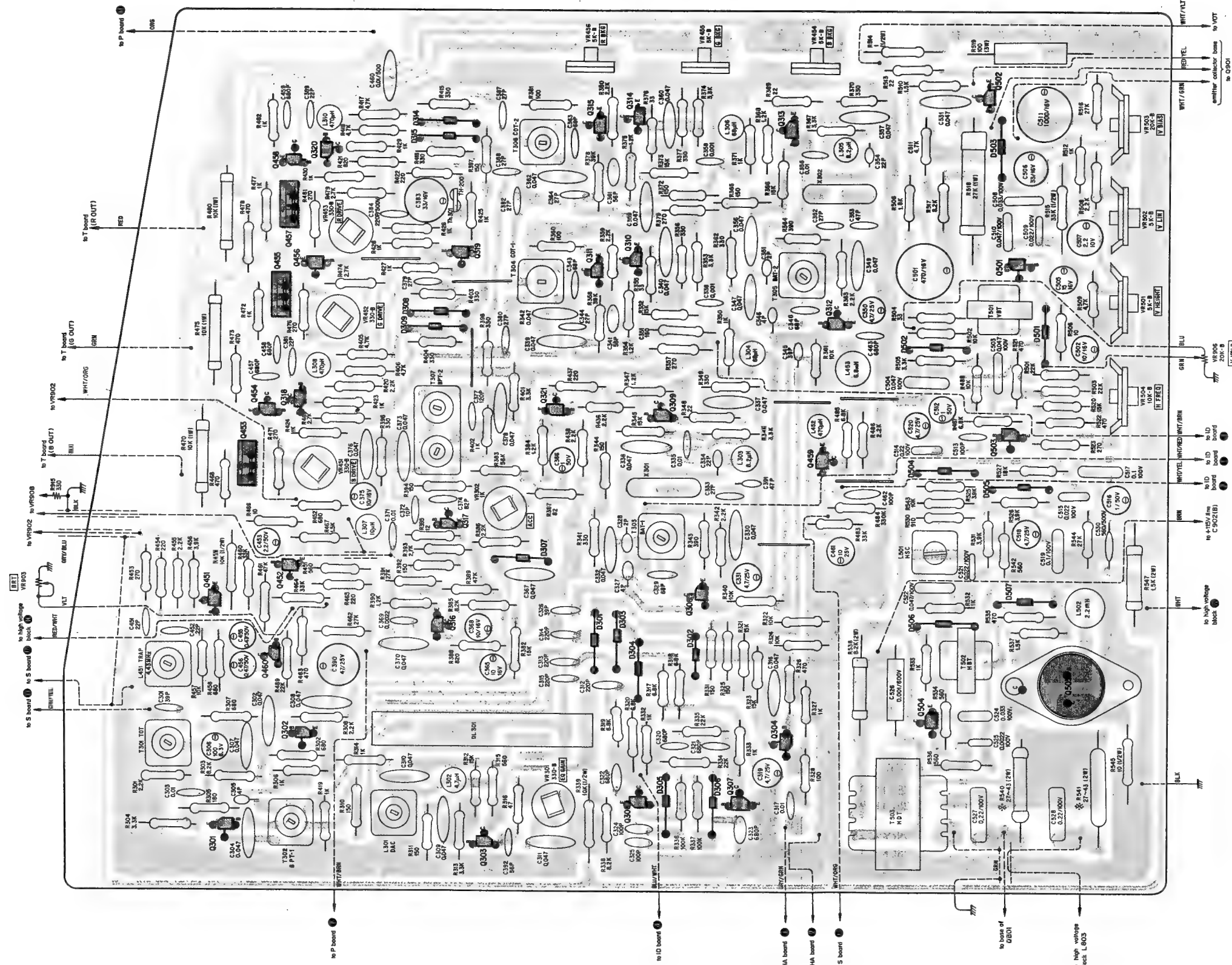
MOUNTING DIAGRAM

CD Circuit Board

— Conductor Side —



CD Circuit Board
— Component Side —

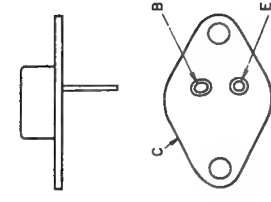
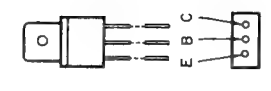


Q301, Q302, Q303, Q304, Q306, Q307, Q308,
Q309, Q310, Q311, Q312, Q313, Q314, Q315,
Q316, Q317, Q318, Q319, Q320, Q321, Q451,
Q452, Q456, Q458, Q501, Q502,
Q503, Q504

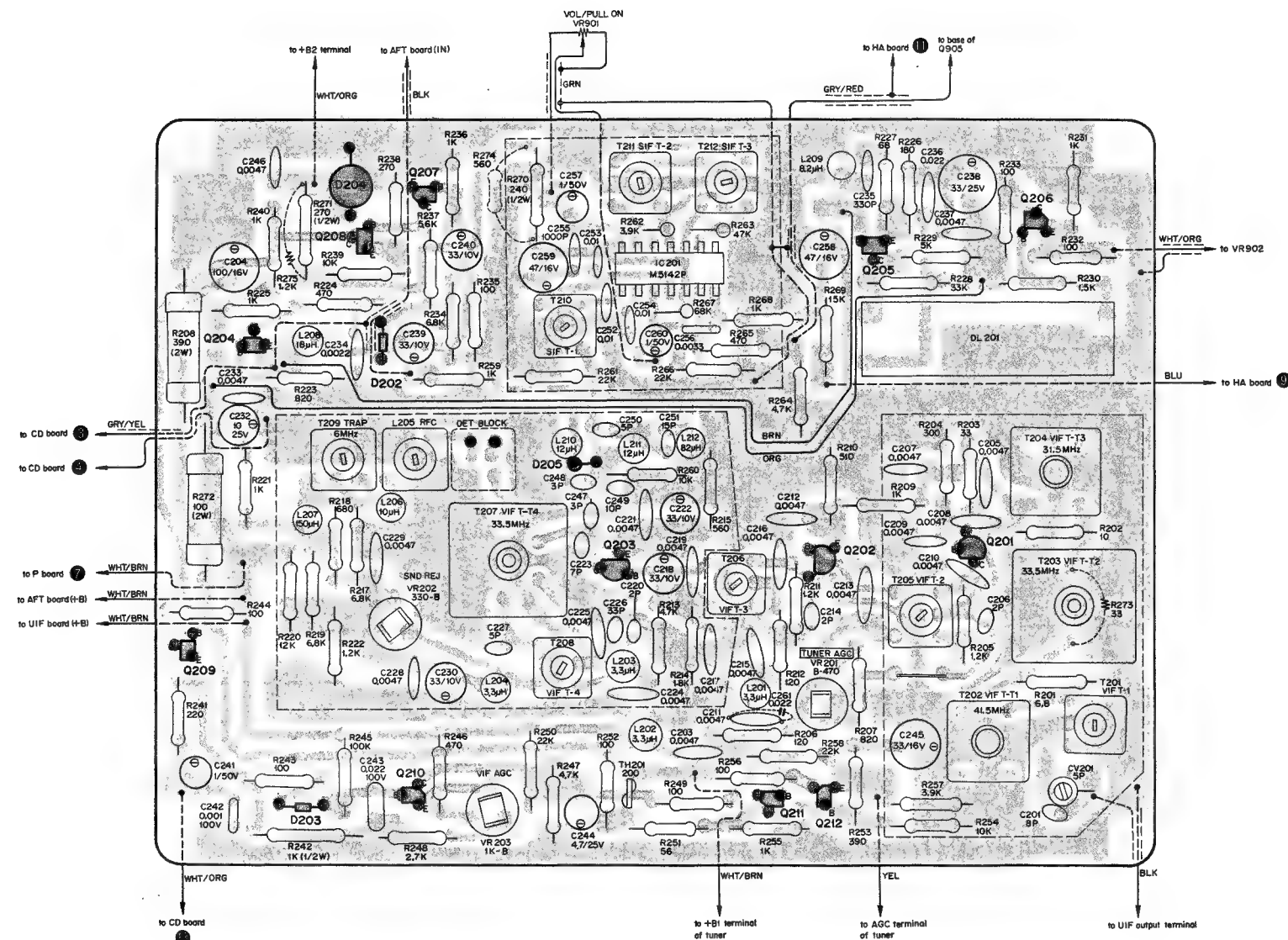
Q453, Q455, Q457

Q505

ALL DIODES



S Circuit Board
— Component Side —



Q201, Q202, Q203



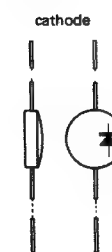
Q204, Q205, Q206, Q207, Q208,
Q209, Q210, Q211, Q212



D201, D202, D203, D205



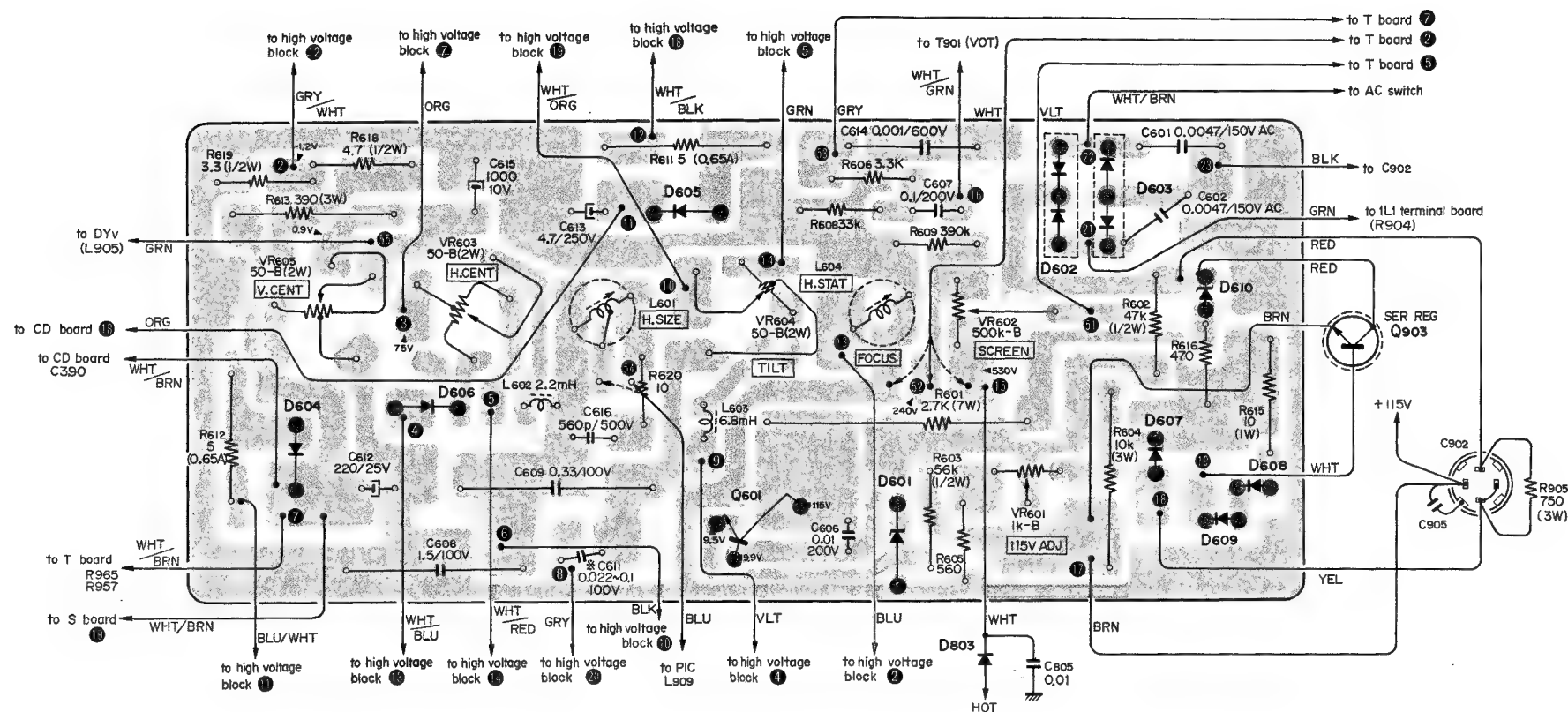
D204



MOUNTING DIAGRAM

P Circuit Board

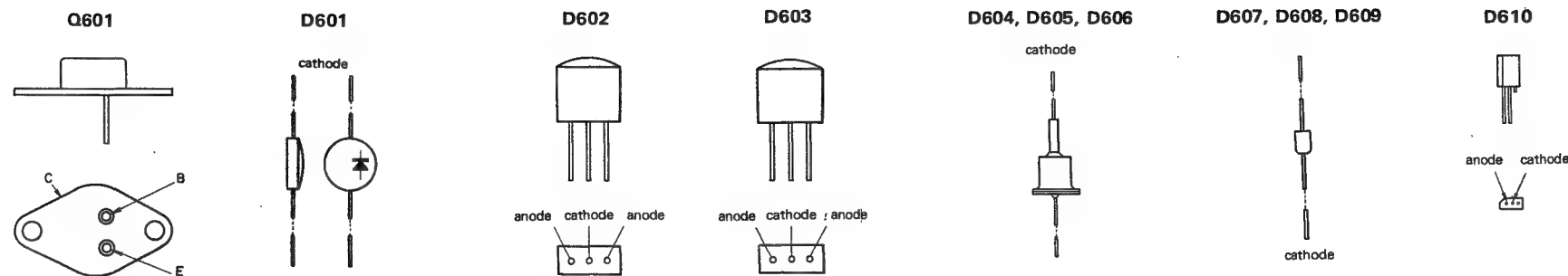
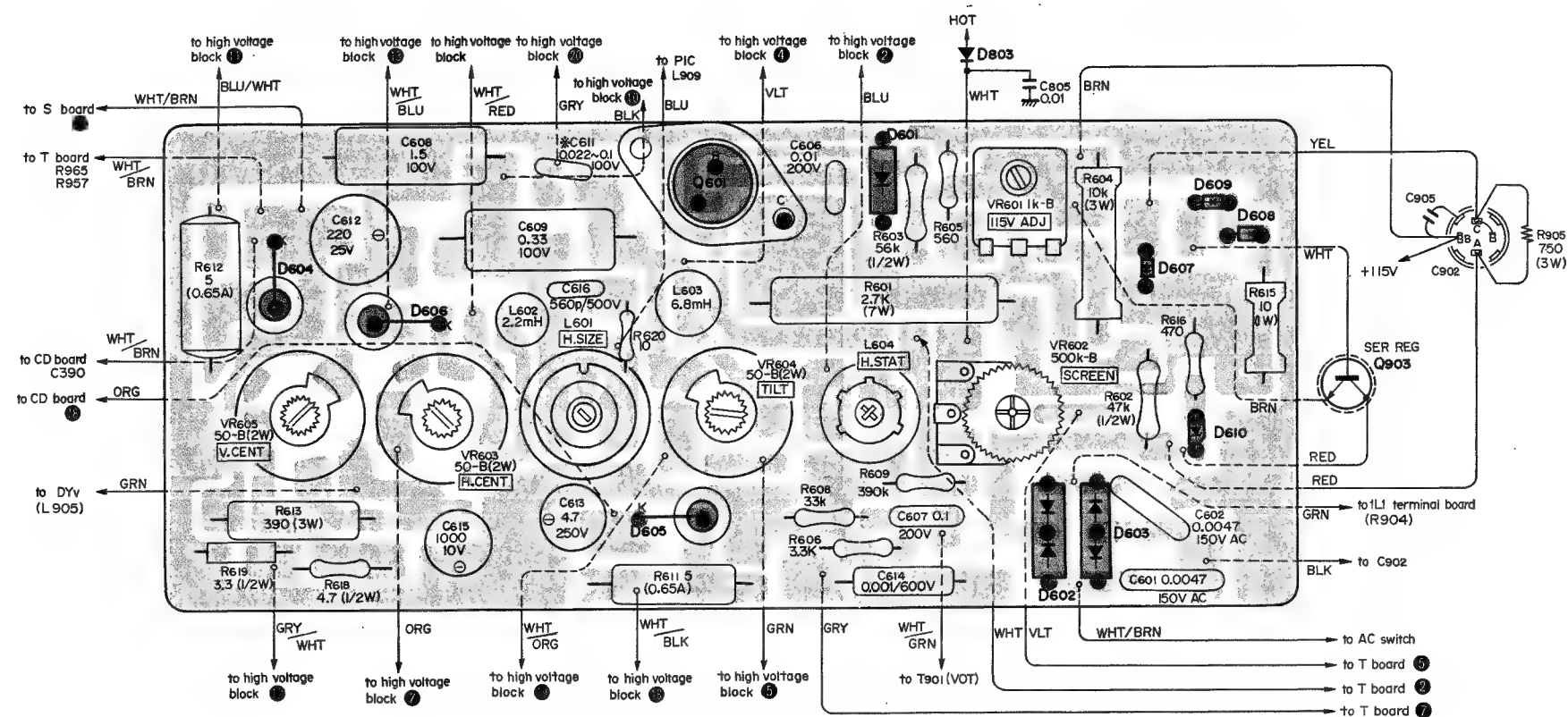
— Conductor Side —



TRANSISTOR		DIODES	
Q601	2SC867	D601	ZB1-11
		D602	CD-4
		D603	CDR-4
		D604	SB-2
		D605	SB-2
		D606	SB-2
		D607	10D05
		D608	10D05
		D609	10D05
		D610	1T264

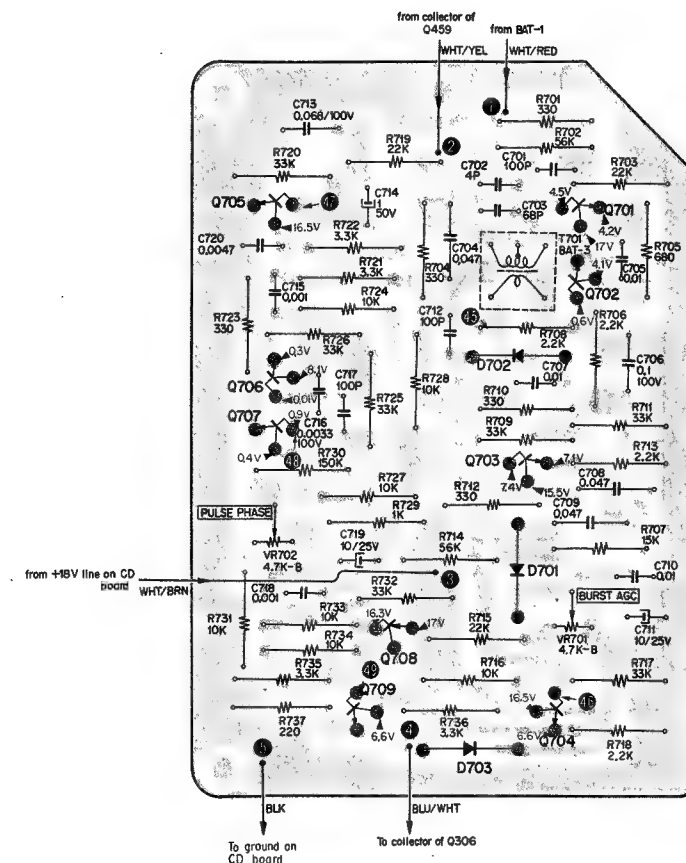
P Circuit Board

— Component Side —



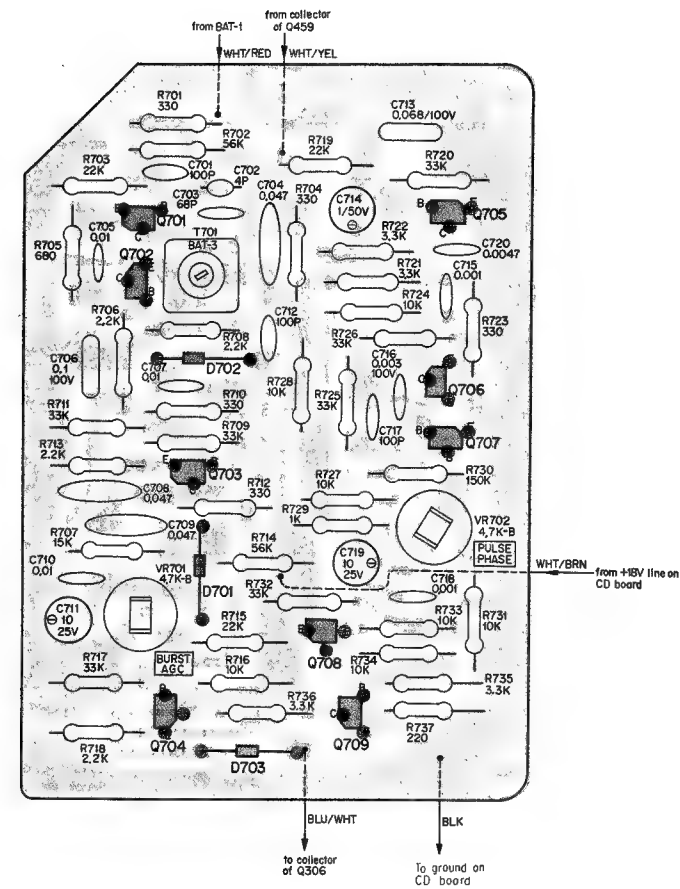
MOUNTING DIAGRAM

ID Circuit Board
— Conductor Side —



TRANSISTORS		DIODES	
Q701	2SC403C	D701	1T40
Q702	2SC633A	D702	1T40
Q703	2SC633A	D703	1T40
Q704	2SC633A		
Q705	2SC633A		
Q706	2SC633A		
Q707	2SC633A		
Q708	2SA677		
Q709	2SC633A		

ID Circuit Board
— Component Side —



ALL TRANSISTORS



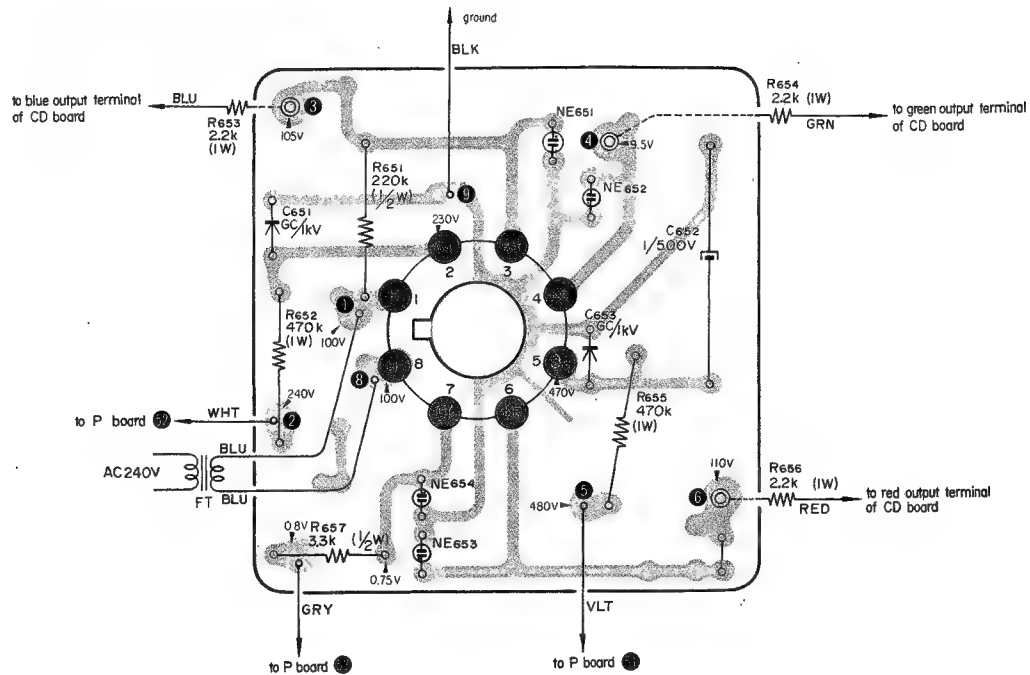
ALL DIODES



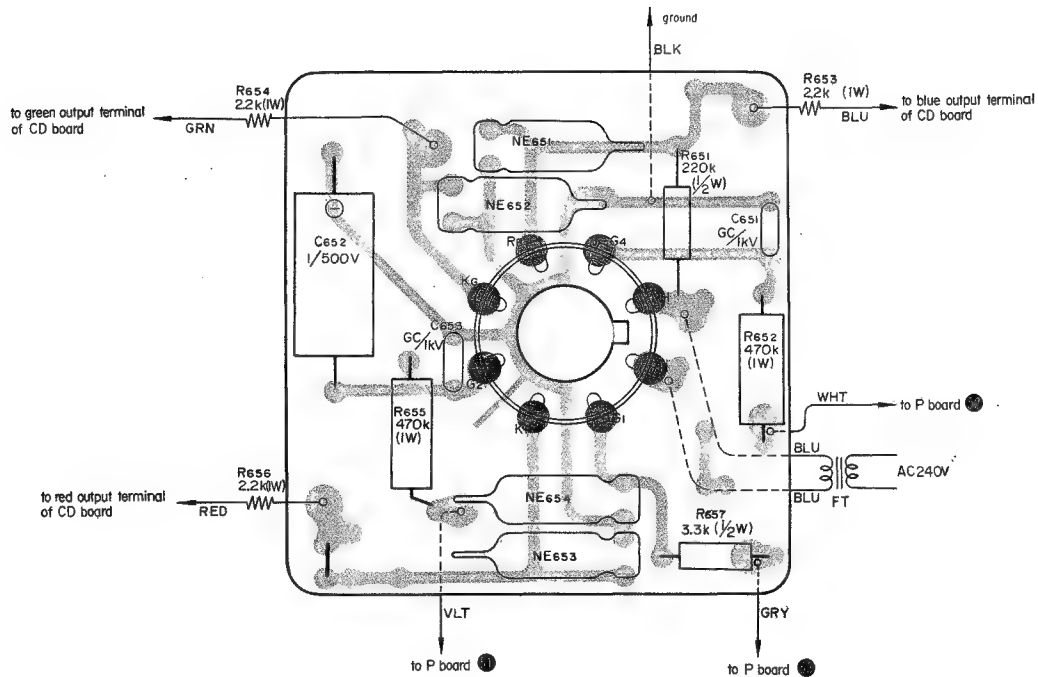
MOUNTING DIAGRAM

T Circuit Board

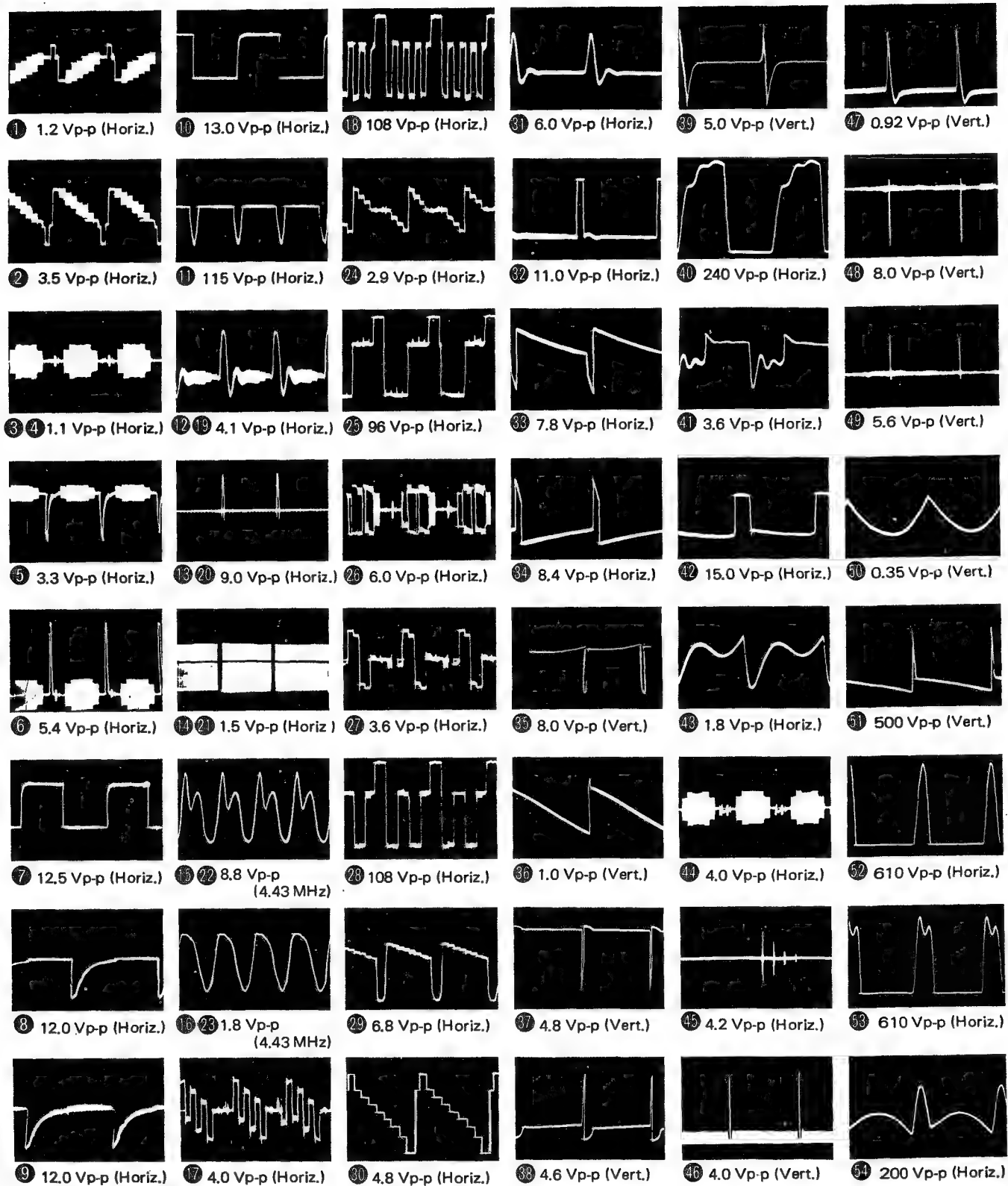
— Conductor Side —

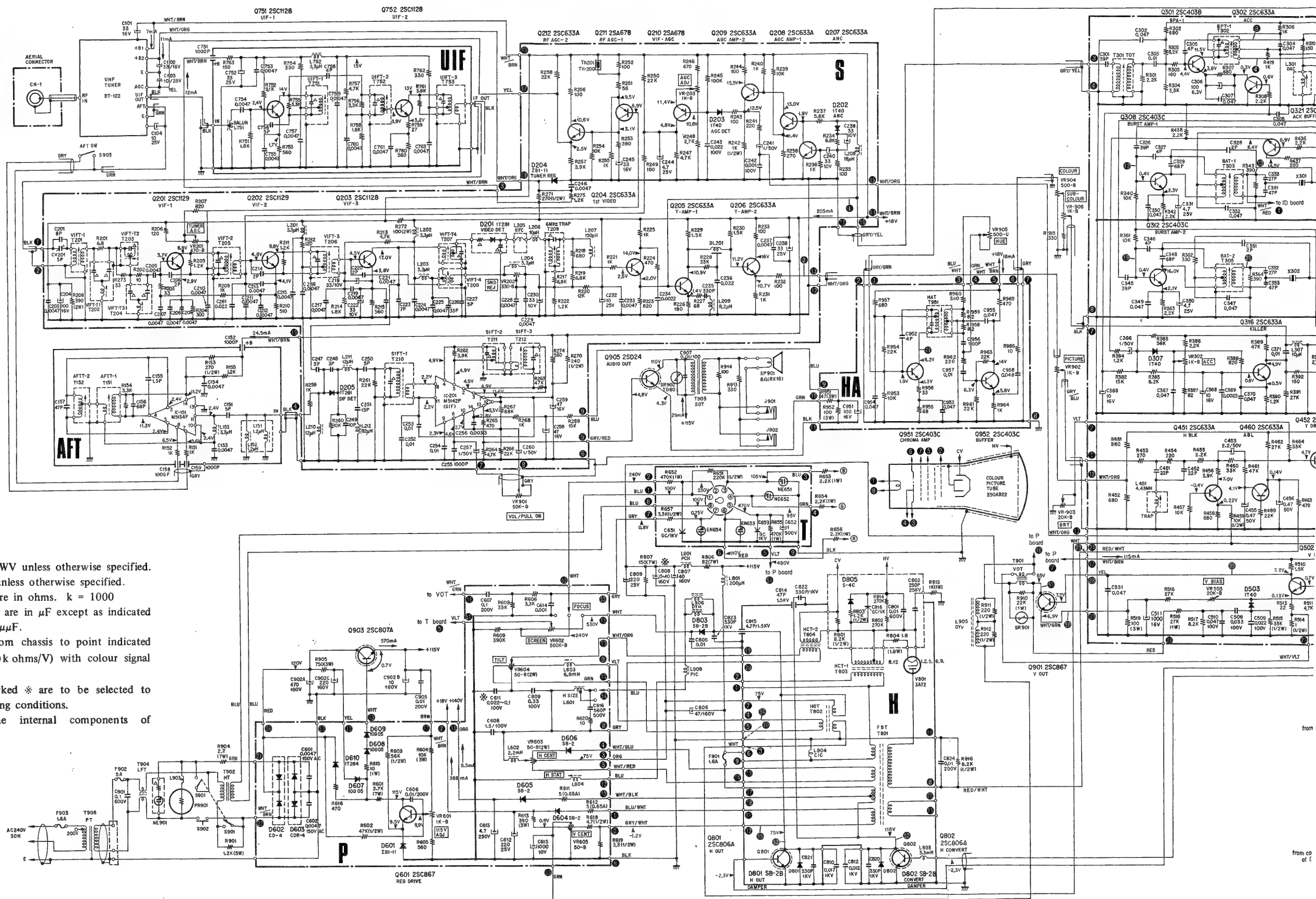


— Component Side —



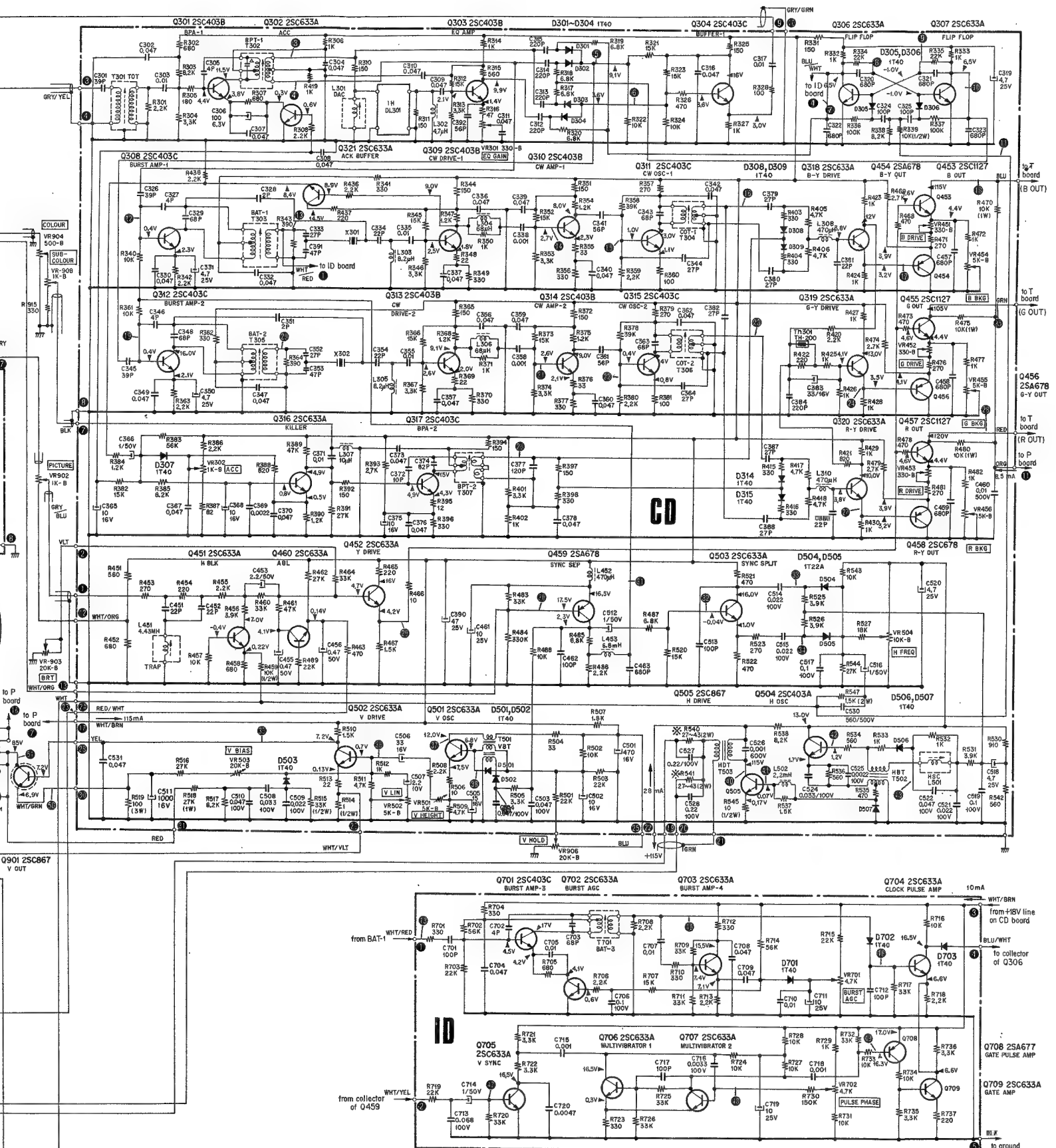
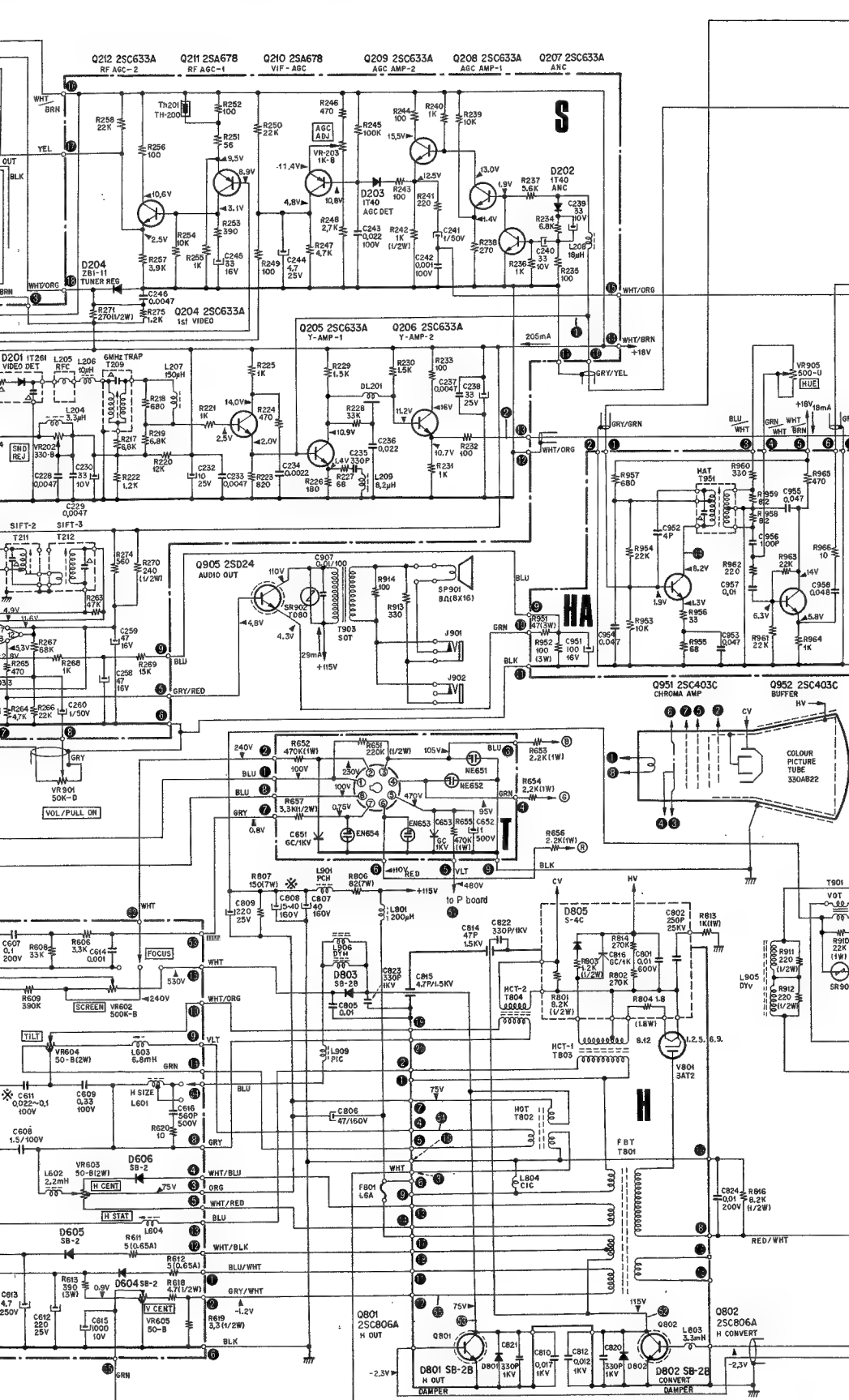
WAVEFORMS

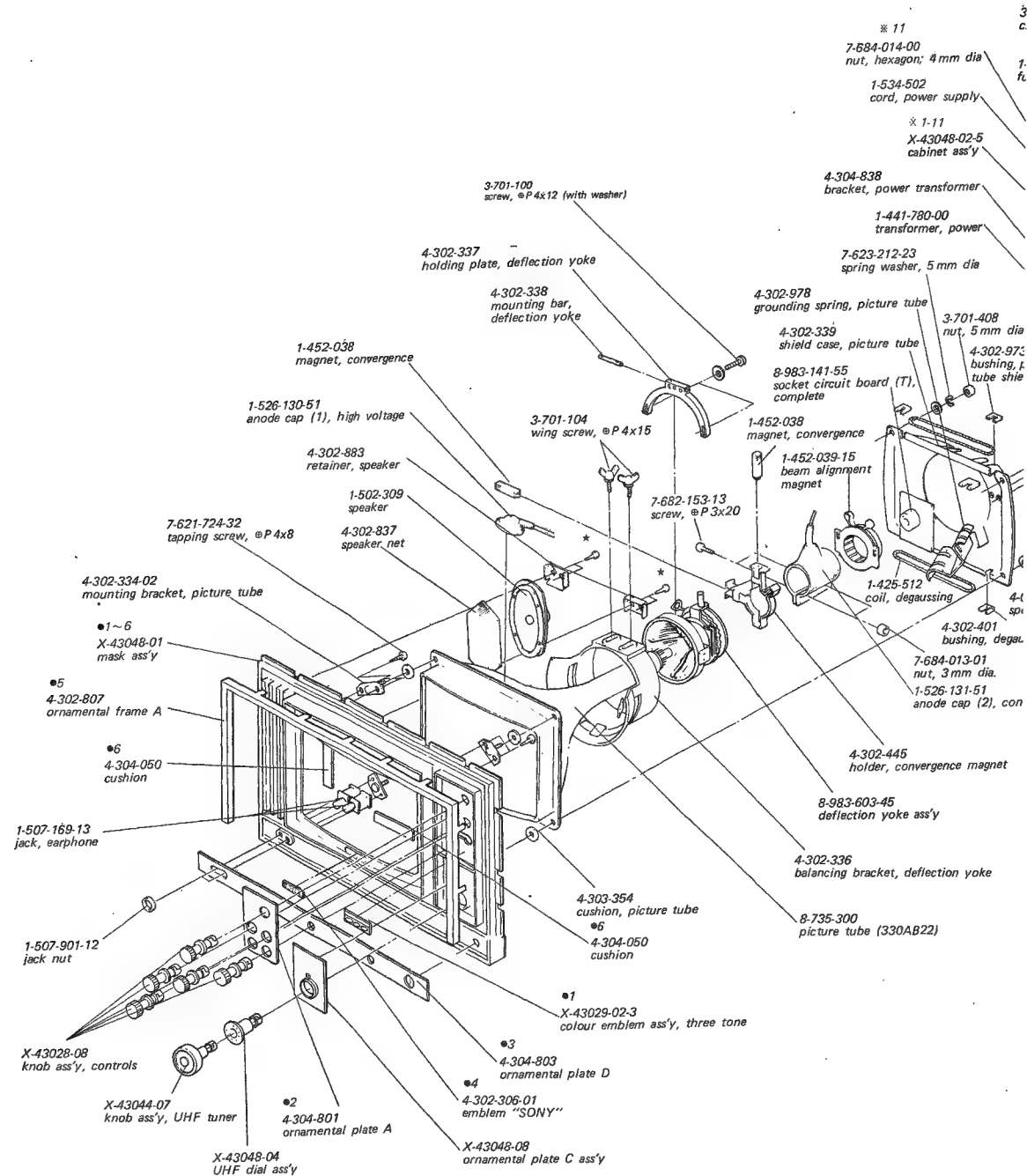
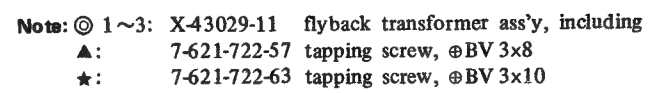


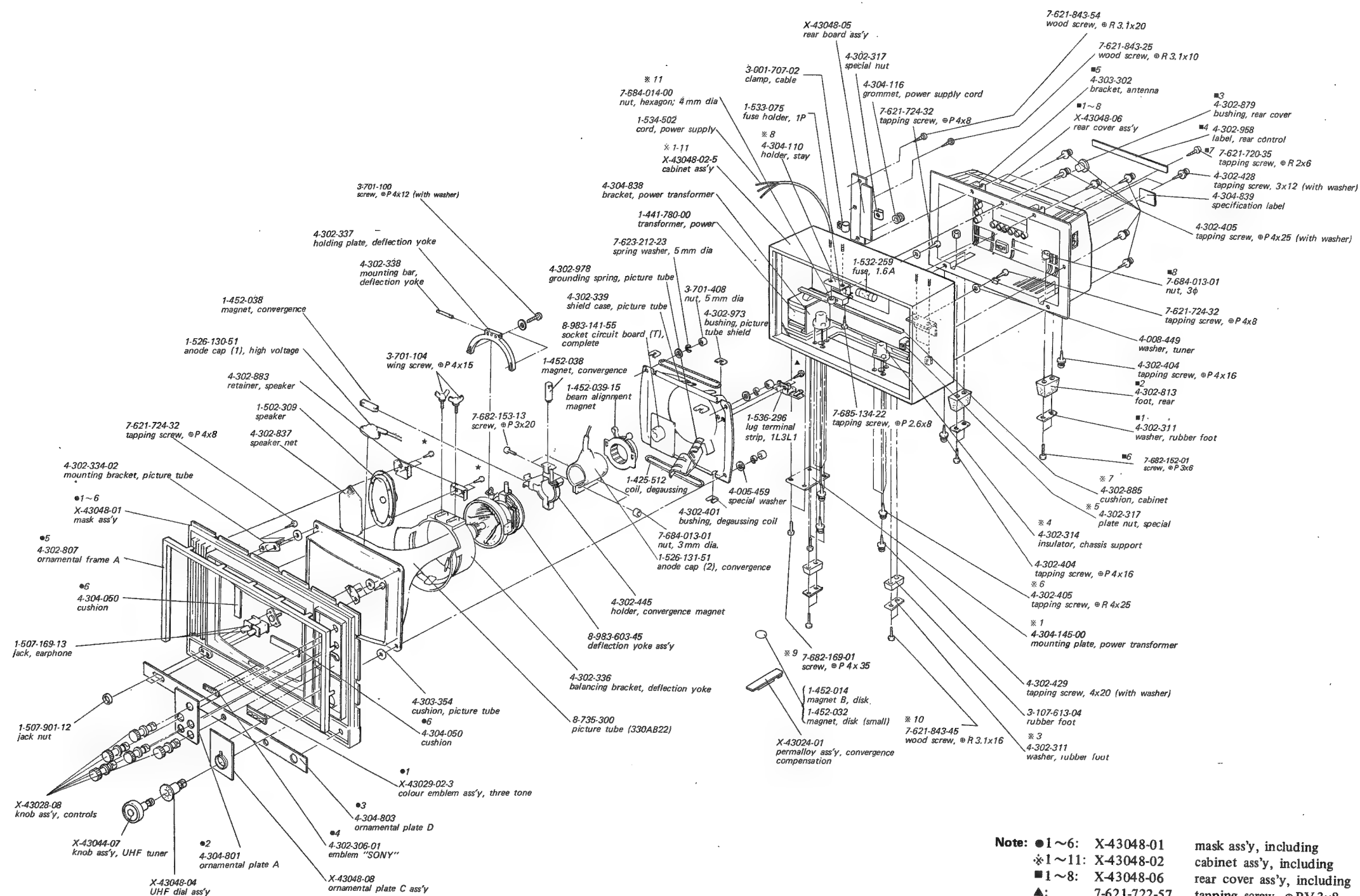


Note:

1. All capacitors are 50 WV unless otherwise specified.
2. All resistors are $\frac{1}{4}W$ unless otherwise specified.
3. All resistance values are in ohms. $k = 1000$
4. All capacitance values are in μF except as indicated with p, which means μF .
5. Voltages measured from chassis to point indicated with a VOM (DC 20k ohms/V) with colour signal input.
6. Resistance values marked * are to be selected to yield specified operating conditions.
7. Δ marks show the internal components of transformers.

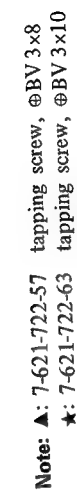






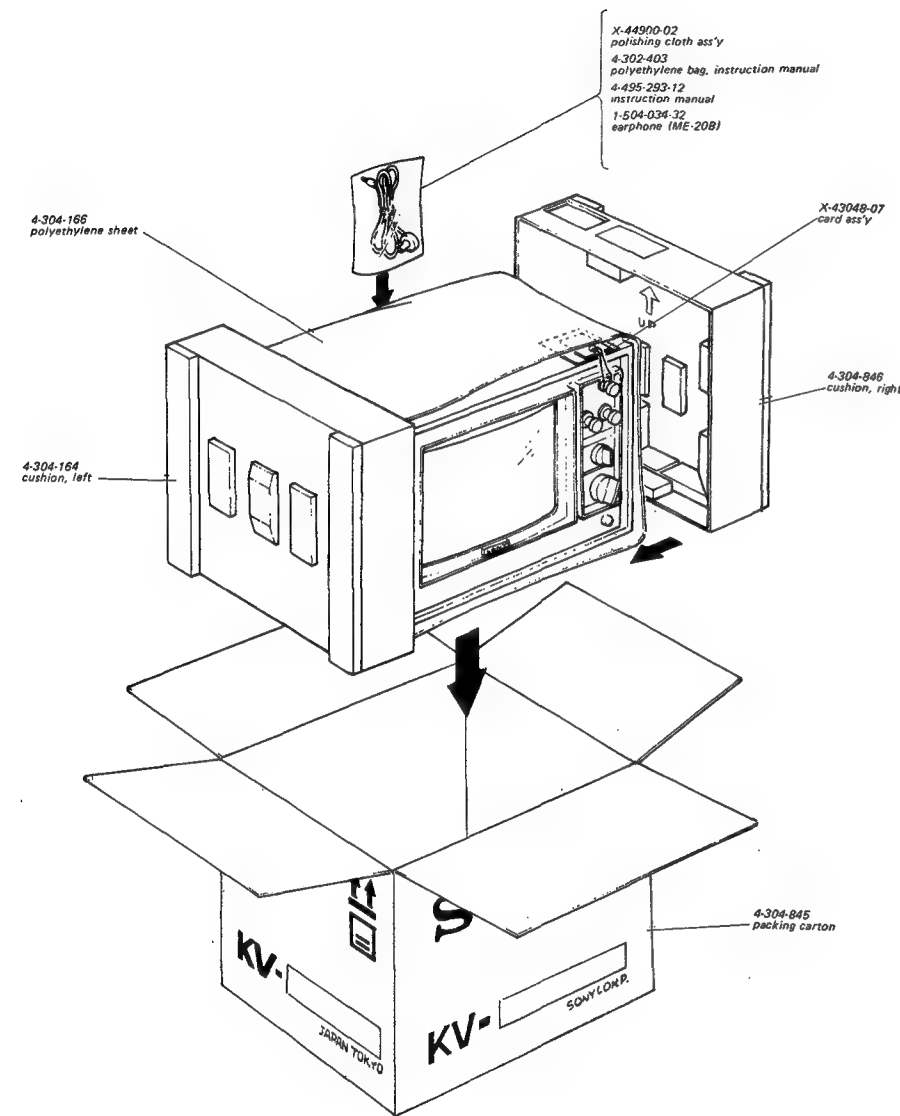
Note:

- 1~6: X-43048-01 mask ass'y, including
- ※1~11: X-43048-02 cabinet ass'y, including
- 1~8: X-43048-06 rear cover ass'y, including
- ▲: 7-621-722-57 tapping screw, @BV3x8
- ★: 7-621-722-63 tapping screw, @BV3x10



KV-1320UB KV-1320UB

PACKING



ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
GENERAL					
8-983-120-15		UHF tuner ass'y (BT-122)	Q451		transistor 2SC633A
8-983-104-35		power supply circuit board (P), complete	Q452		transistor 2SC633A
8-983-120-25		chroma-deflection circuit board (CD), complete	Q453		transistor 2SC1127
8-983-120-55		automatic fine tuning circuit board (AFT), complete	Q454		transistor 2SA678
8-983-120-75		hue adjustment circuit board (HA), complete	Q455		transistor 2SC1127
8-983-120-85		UHF I-F w/ signal circuit board (UIF, S), complete	Q456		transistor 2SA678
8-983-121-25		identification circuit board (ID), complete	Q457		transistor 2SC1127
8-983-141-55		socket circuit board (T), complete	Q458		transistor 2SA678
8-983-601-25		transformer ass'y, vertical output	Q459		transistor 2SA678
8-983-601-35		transformer ass'y, sound output	Q460		transistor 2SC633A
8-983-603-45		deflection yoke ass'y			
SEMICONDUCTORS			Q501		transistor 2SC633A
Q201		transistor 2SC1129	Q502		transistor 2SC633A
Q202		transistor 2SC1129	Q503		transistor 2SC633A
Q203		transistor 2SC1128	Q504		transistor 2SC403A
Q204		transistor 2SC633A	Q505		transistor 2SC867
Q205		transistor 2SC633A			
Q206		transistor 2SC633A	Q601		transistor 2SC867
Q207		transistor 2SC633A	Q701		transistor 2SC403C
Q208		transistor 2SC633A	Q702		transistor 2SC633A
Q209		transistor 2SC633A	Q703		transistor 2SC633A
Q210		transistor 2SA678	Q704		transistor 2SC633A
Q211		transistor 2SA678	Q705		transistor 2SC633A
Q212		transistor 2SC633A	Q706		transistor 2SC633A
			Q707		transistor 2SC633A
Q301		transistor 2SC403B	Q708		transistor 2SA677
Q302		transistor 2SC633A	Q709		transistor 2SC633A
Q303		transistor 2SC403B			
Q304		transistor 2SC403C	Q751		transistor 2SC1128
Q305		— discarded —	Q752		transistor 2SC1128
Q306		transistor 2SC633A			
Q307		transistor 2SC633A	Q801		transistor 2SC806A
Q308		transistor 2SC403C	Q802		transistor 2SC806A
Q309		transistor 2SC403B			
Q310		transistor 2SC403B	Q901		transistor 2SC867
Q311		transistor 2SC403C	Q902		— discarded —
Q312		transistor 2SC403C	Q903		transistor 2SC807A
Q313		transistor 2SC403B	Q904		— discarded —
Q314		transistor 2SC403B	Q905		transistor 2SD24
Q315		transistor 2SC403C			
Q316		transistor 2SC633A	Q951		transistor 2SC403C
Q317		transistor 2SC403C	Q952		transistor 2SC403C
Q318		transistor 2SC633A			
Q319		transistor 2SC633A	D201		diode 1T261
Q320		transistor 2SC633A	D202		diode 1T40
Q321		transistor 2SC633A	D203		diode 1T40
			D204		diode ZB1-11
			D205		diode 1T261
			D301		diode 1T40
			D302		diode 1T40
			D303		diode 1T40
			D304		diode 1T40

— 59 —

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
T152	1-403-811	AFT T-2	C153	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T201	1-403-728	transformer, video i-f; VIFT-1	C154	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T202	1-409-214	coil, 41.5 MHz wave trap; VIFT-T1	C155	1-101-576	1.5 pF ± 0.25 pF 50WV ceramic
T203	1-409-217	coil, 33.5 MHz wave trap; VIFT-T2	C156	1-102-525	68 pF $\pm 5\%$ 50WV ceramic
T204	1-409-215	coil, 31.5 MHz wave trap; VIFT-T3	C157	1-102-774	47 pF ± 0.5 pF 50WV ceramic
T205	1-403-729	transformer, video i-f; VIFT-2	C158	1-102-043	1,000 pF $\pm^{200}_0\%$ 500WV feed through
T206	1-403-729	transformer, video i-f; VIFT-3	C159	1-102-043	1,000 pF $\pm^{200}_0\%$ 500WV feed through
T207	1-409-218	coil, wave trap; VIFT-T4	C201	1-102-663	8 pF ± 0.5 pF 50WV ceramic
T208	1-403-730	transformer, video i-f; VIFT-4	C202		- discarded -
T209	1-409-216	coil, 6 MHz wave trap	C203	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T210	1-403-384	transformer, sound i-f; SIFT-1	C204	1-121-415	100 μ F $\pm^{100}_{10}\%$ 16 WV electrolytic
T211	1-403-385	transformer, sound i-f; SIFT-2	C205	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T212	1-403-386	transformer, sound i-f; SIFT-3	C206	1-102-935	2 pF ± 0.25 pF 50WV ceramic
T301	1-425-678	transformer, take off; TOT	C207	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T302	1-425-677	transformer, 1st band pass; BPT-1	C208	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T303	1-405-372	transformer, burst amp; BAT-1	C209	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T304	1-425-618	transformer, cw oscillator; COT-1	C210	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T305	1-405-372	transformer, burst amp; BAT-2	C211	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T306	1-425-618	transformer, cw oscillator, COT-2	C212	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T307	1-425-506	transformer, 2nd band pass; BPT-2	C213	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T501	1-435-008	transformer, vertical oscillator; VBT	C214	1-102-935	2 pF ± 0.25 pF 50WV ceramic
T502	1-435-034	transformer, horizontal oscillator; HBT	C215	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T503	1-437-025	transformer, horizontal drive; HDT	C216	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T701	1-405-372	transformer, burst amp; BAT-3	C217	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T751	1-403-807	UIFT-1	C218	1-121-402	33 μ F $\pm^{100}_{10}\%$ 10 WV electrolytic
T752	1-403-808	UIFT-2	C219	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T753	1-403-809	UIFT-3	C220	1-102-935	2 pF ± 0.25 pF 50WV ceramic
T801	X-43029-11	transformer ass'y, flyback	C221	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T802		- discarded -	C222	1-121-402	33 μ F $\pm^{100}_{10}\%$ 10 WV electrolytic
T803	1-439-048	transformer, horizontal convergence; HCT-1	C223	1-102-662	7 pF ± 0.5 pF 50WV ceramic
T804	1-439-049	transformer, horizontal convergence; HCT-2	C224	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T901	1-427-300	transformer, vertical output; VOT	C225	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T902	1-441-434	transformer, heater; HT	C226	1-102-963	33 pF $\pm 5\%$ 50WV ceramic
T903	1-427-307	transformer, sound output	C227	1-102-856	5 pF $\pm 5\%$ 50WV ceramic
T904	1-421-302	transformer, line filter	C228	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T906	1-441-780-00	transformer, power; PT	C229	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
T951	1-425-677	transformer, hue adjustment; HAT	C230	1-121-402	33 μ F $\pm^{100}_{10}\%$ 10 WV electrolytic
CAPACITORS			C231		- built in VIDEO DET -
C101	1-121-403	33 μ F $\pm^{100}_{10}\%$ 16 WV electrolytic	C232	1-121-398	10 μ F $\pm^{100}_{10}\%$ 25 WV electrolytic
C102	1-121-403	33 μ F $\pm^{100}_{10}\%$ 16 WV electrolytic	C233	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
C103	1-121-398	10 μ F $\pm^{100}_{10}\%$ 25 WV electrolytic	C234	1-101-002	0.0022 μ F $\pm^{100}_0\%$ 50WV ceramic
C104	1-121-398	10 μ F $\pm^{100}_{10}\%$ 25 WV electrolytic	C235	1-102-832	330 pF $\pm 10\%$ 50WV ceramic
C151	1-102-942	5 pF ± 0.5 pF 50WV ceramic	C236	1-101-005	0.022 μ F $\pm^{100}_0\%$ 50WV ceramic
C152	1-102-043	1,000 pF $\pm^{200}_0\%$ 500WV feed through	C237	1-102-102	0.0047 μ F $\pm 20\%$ 50WV ceramic
			C238	1-121-404	33 μ F $\pm^{100}_{10}\%$ 25 WV electrolytic
			C239	1-121-402	33 μ F $\pm^{100}_{10}\%$ 10 WV electrolytic
			C240	1-121-402	33 μ F $\pm^{100}_{10}\%$ 10 WV electrolytic
			C241	1-121-442	1 μ F $\pm^{150}_{10}\%$ 50WV electrolytic
			C242	1-105-701-12	0.001 μ F $\pm 10\%$ 100WV mylar
			C243	1-105-717-12	0.022 μ F $\pm 10\%$ 100WV mylar
			C244	1-121-395	4.7 μ F $\pm^{150}_{10}\%$ 25 WV electrolytic
			C245	1-121-403	33 μ F $\pm^{100}_{10}\%$ 16 WV electrolytic

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
C246	1-102-102	0.0047 μ F \pm 20% 50WV ceramic	C338	1-102-074	1,000pF \pm 10% 50WV ceramic
C247	1-102-940	3pF \pm 0.5pF 50WV ceramic	C339	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C248	1-102-940	3pF \pm 0.5pF 50WV ceramic	C340	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C249	1-102-947	10pF \pm 5% 50WV ceramic	C341	1-101-884	56pF \pm 5% 50WV ceramic
C250	1-102-942	5pF \pm 0.5pF 50WV ceramic	C342	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C251	1-102-951	15pF \pm 5% 50WV ceramic	C343	1-102-676	68pF \pm 5% 50WV ceramic
C252	1-101-004	0.01 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C344	1-102-961	27pF \pm 5% 50WV ceramic
C253	1-101-004	0.01 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C345	1-101-877	39pF \pm 10% 50WV ceramic
C254	1-101-004	0.01 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C346	1-102-937	4pF \pm 0.25pF 50WV ceramic
C255	1-101-455	1,000pF \pm 20% 50WV ceramic	C347	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C256	1-105-707-12	0.0033 μ F \pm 10% 100WV mylar	C348	1-102-676	68pF \pm 5% 50WV ceramic
C257	1-121-442	1 μ F \pm ¹⁵⁰ / ₁₀ % 50WV electrolytic	C349	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C258	1-121-409	47 μ F \pm ¹⁰⁰ / ₁₀ % 16WV electrolytic	C350	1-121-395	4.7 μ F \pm ¹⁵⁰ / ₁₀ % 25WV electrolytic
C259	1-121-409	47 μ F \pm ¹⁰⁰ / ₁₀ % 16WV electrolytic	C351	1-102-935	2pF \pm 0.25pF 50WV ceramic
C260	1-121-442	1 μ F \pm ¹⁵⁰ / ₁₀ % 50WV electrolytic	C352	1-102-961	27pF \pm 5% 50WV ceramic
C301	1-102-889	39pF \pm 5% 50WV ceramic	C353	1-101-880	47pF \pm 5% 50WV ceramic
C302	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C354	1-102-959	22pF \pm 5% 50WV ceramic
C303	1-101-118	0.01 μ F \pm 20% 50WV ceramic	C355	1-101-118	0.01 μ F \pm 20% 50WV ceramic
C304	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C356	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C305	1-102-937	4pF \pm 0.25pF 50WV ceramic	C357	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C306	1-121-413	100 μ F \pm ¹⁰⁰ / ₁₀ % 6.3WV electrolytic	C358	1-102-074	1,000pF \pm 10% 50WV ceramic
C307	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C359	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C308	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C360	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C309	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C361	1-101-884	56pF \pm 5% 50WV ceramic
C310	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C362	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C311	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C363	1-102-676	68pF \pm 5% 50WV ceramic
C312	1-102-978	220pF \pm 5% 50WV ceramic	C364	1-102-961	27pF \pm 5% 50WV ceramic
C313	1-102-978	220pF \pm 5% 50WV ceramic	C365	1-121-469	10 μ F \pm ¹⁰⁰ / ₁₀ % 16WV electrolytic
C314	1-102-978	220pF \pm 5% 50WV ceramic	C366	1-121-391	1 μ F \pm ¹⁵⁰ / ₁₀ % 50WV electrolytic
C315	1-102-978	220pF \pm 5% 50WV ceramic	C367	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C316	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C368	1-121-469	10 μ F \pm ¹⁰⁰ / ₁₀ % 16WV electrolytic
C317	1-101-118	0.01 μ F \pm 20% 50WV ceramic	C369	1-101-002	0.0022 μ F \pm ¹⁰⁰ / ₁₀ % 50WV ceramic
C318		— discarded —	C370	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C319	1-121-395	4.7 μ F \pm ¹⁵⁰ / ₁₀ % 25WV electrolytic	C371	1-101-118	0.01 μ F \pm 20% 50WV ceramic
C320	1-101-439	680pF \pm 20% 50WV ceramic	C372	1-102-947	10pF \pm 5% 50WV ceramic
C321	1-101-439	680pF \pm 20% 50WV ceramic	C373	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C322	1-101-439	680pF \pm 20% 50WV ceramic	C374	1-102-863	82pF \pm 5% 50WV ceramic
C323	1-101-439	680pF \pm 20% 50WV ceramic	C375	1-121-469	10 μ F \pm ¹⁰⁰ / ₁₀ % 16WV electrolytic
C324	1-102-973	100pF \pm 5% 50WV ceramic	C376	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C325	1-102-973	100pF \pm 5% 50WV ceramic	C377	1-102-679	120pF \pm 5% 50WV ceramic
C326	1-101-877	39pF \pm 10% 50WV ceramic	C378	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic
C327	1-102-937	4pF \pm 0.25pF 50WV ceramic	C379	1-102-961	27pF \pm 5% 50WV ceramic
C328	1-102-935	2pF \pm 0.25pF 50WV ceramic	C380	1-102-961	27pF \pm 5% 50WV ceramic
C329	1-102-676	68pF \pm 5% 50WV ceramic	C381	1-102-959	22pF \pm 5% 50WV ceramic
C330	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C382	1-102-961	27pF \pm 5% 50WV ceramic
C331	1-121-395	4.7 μ F \pm ¹⁵⁰ / ₁₀ % 25WV electrolytic	C383	1-121-403	33 μ F \pm ¹⁰⁰ / ₁₀ % 16WV electrolytic
C332	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C384	1-102-978	220pF \pm 5% 50WV ceramic
C333	1-102-961	27pF \pm 5% 50WV ceramic	C385		— discarded —
C334	1-102-959	22pF \pm 5% 50WV ceramic	C386		— discarded —
C335	1-101-118	0.01 μ F \pm 20% 50WV ceramic	C387	1-102-961	27pF \pm 5% 50WV ceramic
C336	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C388	1-102-961	27pF \pm 5% 50WV ceramic
C337	1-101-006	0.047 μ F \pm ¹⁰⁰ / ₈ % 50WV ceramic	C389	1-102-959	22pF \pm 5% 50WV ceramic
			C390	1-121-410	47 μ F \pm ¹⁰⁰ / ₁₀ % 25WV electrolytic

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>			<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		
C391	1-101-880	47pF	±5%	50WV ceramic	C605		— discarded —		
C392	1-102-850	56pF	±5%	50WV ceramic	C606	1-105-753-12	0.01μF	±10%	200WV mylar
C451	1-102-892	22pF	±10%	50WV ceramic	C607	1-105-765-12	0.1μF	±10%	200WV mylar
C452	1-102-892	22pF	±10%	50WV ceramic	C608	1-108-321-11	1.5μF	±10%	100WV mylar
C453	1-121-450	2.2μF	±150%	50WV electrolytic	C609	1-105-731-13	0.33μF	±10%	100WV mylar
C454		— discarded —			C610		— discarded —		
C455	1-121-726	0.47μF	±150%	50WV electrolytic	*C611	1-105-717-12	0.022μF	±10%	100WV mylar
C456	1-121-726	0.47μF	±150%	50WV electrolytic		1-105-719-12	0.033μF	±10%	100WV mylar
C457	1-101-439	680pF	±20%	50WV ceramic		1-105-721-12	0.047μF	±10%	100WV mylar
C458	1-101-439	680pF	±20%	50WV ceramic		1-105-723-12	0.068μF	±10%	100WV mylar
C459	1-101-439	680pF	±20%	50WV ceramic		1-105-725-12	0.1μF	±10%	100WV mylar
C460	1-101-823	0.01μF	±100%	500WV ceramic	C612	1-121-422	220μF	±100%	25WV electrolytic
C461	1-121-398	10μF	±100%	25WV electrolytic	C613	1-121-747	4.7μF	±150%	250WV electrolytic
C462	1-102-973	100pF	±5%	50WV ceramic	C614	1-105-481-16	0.001μF	±20%	600WV mylar
C463	1-101-439	680pF	±20%	50WV ceramic	C615	1-121-736	1,000μF	±100%	10WV electrolytic
C501	1-121-426	470μF	±100%	16WV electrolytic	C616	1-102-157	560pF	±10%	500WV ceramic
C502	1-121-398	10μF	±100%	25WV electrolytic	C651	1-519-030	1kV, spark gap		
C503	1-106-269-12	0.047μF	±10%	100WV mylar	C652	1-119-242	1μF	±150%	500WV electrolytic
C504	1-106-269-12	0.047μF	±10%	100WV mylar	C653	1-519-030	1kV, spark gap		
C505	1-131-155	15μF	±20%	16WV tantalum	C701	1-102-973	100pF	±5%	50WV ceramic
C506	1-121-403	33μF	±100%	16WV electrolytic	C702	1-102-937	4pF	±0.25pF	50WV ceramic
C507	1-127-024	2.2μF	±20%	10WV electrolytic (alox)	C703	1-102-676	68pF	±5%	50WV ceramic
C508	1-105-719-12	0.033μF	±10%	100WV mylar	C704	1-101-006	0.047μF	±100%	50WV ceramic
C509	1-105-717-12	0.022μF	±10%	100WV mylar	C705	1-101-004	0.01μF	±100%	50WV ceramic
C510	1-105-721-12	0.047μF	±10%	100WV mylar	C706	1-105-725-12	0.1μF	±10%	100WV mylar
C511	1-121-245	1,000μF	±100%	16WV electrolytic	C707	1-101-004	0.01μF	±100%	50WV ceramic
C512	1-121-391	1μF	±150%	50WV electrolytic	C708	1-101-006	0.047μF	±100%	50WV ceramic
C513	1-102-973	100pF	±5%	50WV ceramic	C709	1-101-006	0.047μF	±100%	50WV ceramic
C514	1-105-717-12	0.022μF	±10%	100WV mylar	C710	1-101-004	0.01μF	±100%	50WV ceramic
C515	1-105-717-12	0.022μF	±10%	100WV mylar	C711	1-121-398	10μF	±100%	25WV electrolytic
C516	1-121-391	1μF	±150%	50WV electrolytic	C712	1-102-973	100pF	±5%	50WV ceramic
C517	1-105-725-12	0.1μF	±10%	100WV mylar	C713	1-105-723-12	0.068μF	±10%	100WV mylar
C518	1-121-395	4.7μF	±150%	25WV electrolytic	C714	1-121-391	1μF	±150%	50WV electrolytic
C519	1-105-725-12	0.1μF	±10%	100WV mylar	C715	1-101-001	0.001μF	±100%	50WV ceramic
C520	1-121-395	4.7μF	±150%	25WV electrolytic	C716	1-106-184-11	0.0033μF	±5%	100WV mylar
C521	1-105-717-12	0.022μF	±10%	100WV mylar	C717	1-102-973	100pF	±5%	50WV ceramic
C522	1-105-721-12	0.047μF	±10%	100WV mylar	C718	1-101-001	0.001μF	±100%	50WV ceramic
C523		— discarded —			C719	1-121-398	10μF	±100%	25WV electrolytic
C524	1-105-719-12	0.033μF	±10%	100WV mylar	C720	1-101-003	0.0047μF	±100%	50WV ceramic
C525	1-105-705-12	0.0022μF	±10%	100WV mylar	C751	1-102-043	1,000pF	±200%	500WV feed through
C526	1-105-461-16	0.001μF	±10%	600WV mylar	C752	1-121-404	33μF	±100%	25WV electrolytic
C527	1-105-729-13	0.22μF	±10%	100WV mylar	C753	1-102-102	0.0047μF	±20%	50WV ceramic
C528	1-105-729-13	0.22μF	±10%	100WV mylar	C754	1-102-102	0.0047μF	±20%	50WV ceramic
C529		— discarded —			C755	1-102-102	0.0047μF	±20%	50WV ceramic
C530	1-102-157	560μF	±10%	500WV ceramic	C756	1-102-942	5pF	±0.5pF	50WV ceramic
C531	1-101-006	0.047μF	±100%	50WV ceramic	C757	1-102-102	0.0047μF	±20%	50WV ceramic
C601	1-102-189	0.0047μF	±80%	150WV ceramic	C758	1-102-937	4pF	±0.25pF	50WV ceramic
C602	1-102-189	0.0047μF	±80%	150WV ceramic	C759	1-102-102	0.0047μF	±20%	50WV ceramic
C603		— discarded —			C760	1-102-102	0.0047μF	±20%	50WV ceramic
C604		— discarded —			C761	1-102-102	0.0047μF	±20%	50WV ceramic
					C762		— discarded —		
					C763	1-102-102	0.0047μF	±20%	50WV ceramic

* Mark to be selected.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
C801	1-105-467-13	0.01 μ F \pm 10% 600WV mylar	R205	1-246-675	1.2k Ω
C802	1-102-146	250pF \pm 20% 25 kWV ceramic	R206	1-246-651	120 Ω
C803		— discarded —	R207	1-246-671	820 Ω
C804		— discarded —	R208	1-206-126	390 Ω 2W metal oxide
C805	1-108-335-11	0.01 μ F \pm 20% 1kWV mylar	R209	1-246-673	1k Ω
C806	1-119-244	47 μ F \pm 10% 160WV electrolytic	R210	1-246-666	510 Ω
C807	1-119-310	40 μ F \pm 20% 160WV electrolytic	R211	1-246-675	1.2k Ω
C808	1-119-246	5 μ F \pm 20% 160WV electrolytic	R212	1-246-651	120 Ω
C809	1-119-273	220 μ F \pm 10% 25WV electrolytic	R213	1-246-689	4.7k Ω
C810	1-129-778	0.017 μ F \pm 5% 1kWV polypropylene	R214	1-246-679	1.8k Ω
C811		— discarded —	R215	1-246-667	560 Ω
C812	1-129-777	0.012 μ F \pm 5% 1kWV polypropylene	R216		built in VIDEO DET
C813		— discarded —	R217	1-246-693	6.8k Ω
C814	1-102-087	47pF \pm 10% 1.5kWV ceramic	R218	1-246-669	680 Ω
C815	1-102-087	47pF \pm 10% 1.5kWV ceramic	R219	1-246-693	6.8k Ω
C816	1-519-030	1kV, spark gap	R220	1-246-699	12k Ω
C817		— discarded —	R221	1-246-673	1k Ω
C818		— discarded —	R222	1-246-675	1.2k Ω
C819		— discarded —	R223	1-246-671	820 Ω
C820	1-102-095	330pF \pm 20% 1kWV ceramic	R224	1-246-665	470 Ω
C821	1-102-095	330pF \pm 20% 1kWV ceramic	R225	1-246-673	1k Ω
C822	1-102-095	330pF \pm 20% 1kWV ceramic	R226	1-246-655	180 Ω
C823	1-102-095	330pF \pm 20% 1kWV ceramic	R227	1-246-645	68 Ω
C824	1-105-753-12	0.01 μ F \pm 10% 200WV mylar	R228	1-246-709	33k Ω
C901	1-129-739	0.1 μ F \pm 20% 600WV film	R229	1-246-677	1.5k Ω
C902	1-125-064	470 μ F + 10 μ F + 220 μ F \pm 10% 160WV electrolytic (block type)	R230	1-246-677	1.5k Ω
C905	1-105-913-12	0.01 μ F \pm 20% 200WV mylar	R231	1-246-673	1k Ω
C951	1-121-415	100 μ F \pm 10% 16WV electrolytic	R232	1-246-649	100 Ω
C952	1-102-937	4pF \pm 0.25pF 50WV ceramic	R233	1-246-649	100 Ω
C953	1-102-196	0.047 μ F \pm 20% 50WV ceramic	R234	1-246-693	6.8k Ω
C954	1-102-196	0.047 μ F \pm 20% 50WV ceramic	R235	1-246-649	100 Ω
C955	1-102-196	0.047 μ F \pm 20% 50WV ceramic	R236	1-246-673	1k Ω
C956	1-102-973	100pF \pm 5% 50WV ceramic	R237	1-246-691	5.6k Ω
C957	1-101-118	0.01 μ F \pm 20% 50WV ceramic	R238	1-246-659	270 Ω
C958	1-102-196	0.047 μ F \pm 20% 50WV ceramic	R239	1-246-697	10k Ω
CV201	1-141-136	5pF ceramic, cylinder trimmer	R240	1-246-673	1k Ω
RESISTORS			R241	1-246-657	220 Ω
(All resistors are \pm 5% ERD14T carbon, unless otherwise specified)			R242	1-250-873	1k Ω RD12T
R151	1-246-673	1k Ω	R243	1-246-649	100 Ω
R152	1-246-673	1k Ω	R244	1-246-649	100 Ω
R153	1-250-859	270 Ω RD12T	R245	1-246-721	100k Ω
R154	1-246-685	3.3k Ω	R246	1-246-665	470 Ω
R155	1-246-675	1.2k Ω	R247	1-246-689	4.7k Ω
R201	1-246-621	6.8 Ω	R248	1-246-683	2.7k Ω
R202	1-246-625	10 Ω	R249	1-246-649	100 Ω
R203	1-246-637	33 Ω	R250	1-246-705	22k Ω
R204	1-246-660	300 Ω	R251	1-246-643	56 Ω
			R252	1-246-649	100 Ω
			R253	1-246-663	390 Ω
			R254	1-246-697	10k Ω
			R255	1-246-673	1k Ω
			R256	1-246-649	100 Ω
			R257	1-246-687	3.9k Ω

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R258	1-246-705	22k Ω	R335	1-246-705	22k Ω
R259	1-246-673	1k Ω	R336	1-246-721	100k Ω
R260	1-246-697	10k Ω	R337	1-246-721	100k Ω
R261	1-246-705	22k Ω	R338	1-246-695	8.2k Ω
R262	1-248-687	3.9k Ω ERD14V	R339	1-250-897	10k Ω RD12T
R263	1-248-713	47k Ω ERD14V	R340	1-246-697	10k Ω
R264	1-246-689	4.7k Ω	R341	1-246-661	330 Ω
R265	1-246-665	470 Ω	R342	1-246-681	2.2k Ω
R266	1-246-705	22k Ω	R343	1-246-663	390 Ω
R267	1-248-717	68k Ω ERD14V	R344	1-246-653	150 Ω
R268	1-246-673	1k Ω	R345	1-246-701	15k Ω
R269	1-246-701	15k Ω	R346	1-246-685	3.3k Ω
R270	1-250-858	240 Ω RD12T	R347	1-246-675	1.2k Ω
R271	1-250-859	270 Ω RD12T	R348	1-246-633	22 Ω
R272	1-206-055	100 Ω 2W metal oxide	R349	1-246-661	330 Ω
R273	1-246-637	33 Ω	R350	1-246-673	1k Ω
R274	1-246-667	560 Ω	R351	1-246-653	150 Ω
R275	1-246-675	1.2k Ω	R352	1-246-701	15k Ω
R301	1-246-681	2.2k Ω	R353	1-246-685	3.3k Ω
R302	1-246-669	680 Ω	R354	1-246-675	1.2k Ω
R303	1-246-695	8.2k Ω	R355	1-246-637	33 Ω
R304	1-246-685	3.3k Ω	R356	1-246-661	330 Ω
R305	1-246-655	180 Ω	R357	1-246-659	270 Ω
R306	1-246-673	1k Ω	R358	1-246-711	39k Ω
R307	1-246-669	680 Ω	R359	1-246-681	2.2k Ω
R308	1-246-681	2.2k Ω	R360	1-246-649	100 Ω
R309		— discarded —	R361	1-246-697	10k Ω
R310	1-246-653	150 Ω	R362	1-246-661	330 Ω
R311	1-246-653	150 Ω	R363	1-246-681	2.2k Ω
R312	1-246-701	15k Ω	R364	1-246-663	390 Ω
R313	1-246-685	3.3k Ω	R365	1-246-653	150 Ω
R314	1-246-673	1k Ω	R366	1-246-701	15k Ω
R315	1-246-667	560 Ω	R367	1-246-685	3.3k Ω
R316	1-246-641	47 Ω	R368	1-246-675	1.2k Ω
R317	1-246-693	6.8k Ω	R369	1-246-633	22 Ω
R318	1-246-693	6.8k Ω	R370	1-246-661	330 Ω
R319	1-246-693	6.8k Ω	R371	1-246-673	1k Ω
R320	1-246-693	6.8k Ω	R372	1-246-653	150 Ω
R321	1-246-701	15k Ω	R373	1-246-701	15k Ω
R322	1-246-697	10k Ω	R374	1-246-685	3.3k Ω
R323	1-246-701	15k Ω	R375	1-246-675	1.2k Ω
R324	1-246-697	10k Ω	R376	1-246-637	33 Ω
R325	1-246-653	150 Ω	R377	1-246-661	330 Ω
R326	1-246-665	470 Ω	R378	1-246-711	39k Ω
R327	1-246-673	1k Ω	R379	1-246-659	270 Ω
R328	1-246-649	100 Ω	R380	1-246-681	2.2k Ω
R329		— discarded —	R381	1-246-649	100 Ω
R330		— discarded —	R382	1-246-701	15k Ω
R331	1-246-653	150 Ω	R383	1-246-715	56k Ω
R332	1-246-673	1k Ω	R384	1-246-675	1.2k Ω
R333	1-246-673	1k Ω	R385	1-246-695	8.2k Ω
R334	1-246-705	22k Ω	R386	1-246-681	2.2k Ω
			R387	1-246-647	82 Ω

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R388	1-246-671	820Ω	R465	1-246-657	220Ω
R389	1-246-713	47kΩ	R466	1-246-625	10Ω
R390	1-246-675	1.2kΩ	R467	1-246-677	1.5kΩ
R391	1-246-707	27kΩ	R468	1-246-665	470Ω
R392	1-246-653	150Ω	R469	1-246-683	2.7kΩ
R393	1-246-683	2.7kΩ	R470	1-206-104	10kΩ 1W metal oxide
R394	1-246-653	150Ω	R471	1-246-659	270Ω
R395	1-246-627	12Ω	R472	1-246-673	1kΩ
R396	1-246-661	330Ω	R473	1-246-665	470Ω
R397	1-246-653	150Ω	R474	1-246-683	2.7kΩ
R398	1-246-661	330Ω	R475	1-206-104	10kΩ 1W metal oxide
R401	1-246-685	3.3kΩ	R476	1-246-659	270Ω
R402	1-246-673	1kΩ	R477	1-246-673	1kΩ
R403	1-246-661	330Ω	R478	1-246-665	470Ω
R404	1-246-661	330Ω	R479	1-246-683	2.7kΩ
R405	1-246-689	4.7kΩ	R480	1-206-104	10kΩ 1W metal oxide
R406	1-246-689	4.7kΩ	R481	1-246-659	270Ω
R415	1-246-661	330Ω	R482	1-246-673	1kΩ
R416	1-246-661	330Ω	R483	1-246-709	33kΩ
R417	1-246-689	4.7kΩ	R484	1-246-733	330kΩ
R418	1-246-689	4.7kΩ	R485	1-246-693	6.8kΩ
R419	1-246-673	1kΩ	R486	1-246-681	2.2kΩ
R420	1-246-681	2.2kΩ	R487	1-246-693	6.8kΩ
R421	1-246-671	820Ω	R488	1-246-697	10kΩ
R422	1-246-657	220Ω	R489	1-246-705	22kΩ
R423	1-246-673	1kΩ	R501	1-246-705	22kΩ
R424	1-246-673	1kΩ	R502	1-246-697	10kΩ
R425	1-246-673	1kΩ	R503	1-246-705	22kΩ
R426	1-246-673	1kΩ	R504	1-246-637	33Ω
R427	1-246-673	1kΩ	R505	1-246-685	3.3kΩ
R428	1-246-673	1kΩ	R506	1-246-625	10Ω
R429	1-246-673	1kΩ	R507	1-246-679	1.8kΩ
R430	1-246-673	1kΩ	R508	1-246-681	2.2kΩ
R436	1-246-681	2.2kΩ	R509	1-246-689	4.7kΩ
R437	1-246-657	220Ω	R510	1-246-677	1.5kΩ
R438	1-246-681	2.2kΩ	R511	1-246-689	4.7kΩ
R451	1-246-667	560Ω	R512	1-246-673	1kΩ
R452	1-246-669	680Ω	R513	1-246-633	22Ω
R453	1-246-659	270Ω	R514	1-207-185	1Ω ½W wire wound
R454	1-246-657	220Ω	R515	1-250-909	33kΩ RD12T
R455	1-246-681	2.2kΩ	R516	1-246-707	27kΩ
R456	1-246-687	3.9kΩ	R517	1-246-695	8.2kΩ
R457	1-246-697	10kΩ	R518	1-211-090	27kΩ RD1P
R458	1-246-669	680Ω	R519	1-205-455	100Ω 3W cement coated
R459	1-250-897	10kΩ RD12T	R520	1-246-701	15kΩ
R460	1-246-709	33kΩ	R521	1-246-665	470Ω
R461	1-246-713	47kΩ	R522	1-246-665	470Ω
R462	1-246-707	27kΩ	R523	1-246-659	270Ω
R463	1-246-665	470Ω	R524		— discarded —
R464	1-246-709	33kΩ	R525	1-246-687	3.9kΩ
			R526	1-246-687	3.9kΩ
			R527	1-246-703	18kΩ

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R528		— discarded —	R705	1-246-669	680Ω
R529		— discarded —	R706	1-246-681	2.2 kΩ
R530	1-246-672	910Ω	R707	1-246-701	15 kΩ
R531	1-246-687	3.9 kΩ	R708	1-246-681	2.2 kΩ
R532	1-246-673	1 kΩ	R709	1-246-709	33 kΩ
R533	1-246-673	1 kΩ	R710	1-246-661	330Ω
R534	1-246-667	560Ω	R711	1-246-709	33 kΩ
R535	1-246-665	470Ω	R712	1-246-661	330Ω
R536	1-246-667	560Ω	R713	1-246-681	2.2 kΩ
R537	1-246-677	1.5 kΩ	R714	1-246-715	56 kΩ
R538	1-206-132	8.2 kΩ 2W metal oxide	R715	1-246-705	22 kΩ
*R540	1-206-119	27Ω 2W metal oxide	R716	1-246-697	10 kΩ
*R541	1-206-120	33Ω 2W metal oxide	R717	1-246-709	33 kΩ
	1-206-297	43Ω 2W metal oxide	R718	1-246-681	2.2 kΩ
R542	1-246-667	560Ω	R719	1-246-705	22 kΩ
R543	1-246-697	10 kΩ	R720	1-246-709	33 kΩ
R544	1-246-707	27 kΩ	R721	1-246-685	3.3 kΩ
R545	1-250-825	10Ω RD12T	R722	1-246-685	3.3 kΩ
R546		— discarded —	R723	1-246-661	330Ω
R547	1-206-130	1.5 kΩ 2W metal oxide	R724	1-246-697	10 kΩ
R601	1-205-465	2.7 kΩ 7W cement coated	R725	1-246-709	33 kΩ
R602	1-250-913	47 kΩ RD12T	R726	1-246-709	33 kΩ
R603	1-250-915	56 kΩ RD12T	R727	1-246-697	10 kΩ
R604	1-206-049	10 kΩ 3W metal oxide	R728	1-246-697	10 kΩ
R605	1-246-667	560Ω	R729	1-246-671	1 kΩ
R606	1-246-685	3.3 kΩ	R730	1-246-725	150 kΩ
R607		— discarded —	R731	1-246-697	10 kΩ
R608	1-246-709	33 kΩ	R732	1-246-709	33 kΩ
R609	1-246-735	390 kΩ	R733	1-246-697	10 kΩ
R610		— discarded —	R734	1-246-697	10 kΩ
R611	1-207-241-12	5Ω 0.65A wire wound	R735	1-246-685	3.3 kΩ
R612	1-207-241-12	5Ω 0.65A wire wound	R736	1-246-685	3.3 kΩ
R613	1-205-456	390Ω 3W cement coated	R737	1-246-657	220Ω
R614		— discarded —	R751	1-246-679	1.8 kΩ
R615	1-206-069	10Ω 1W metal oxide	R752	1-246-696	9.1 kΩ
R616	1-246-665	470Ω	R753	1-246-667	560Ω
R617		— discarded —	R754	1-246-661	330Ω
R618	1-250-817	4.7Ω RD12T	R755	1-246-685	3.3 kΩ
R619	1-202-513	3.3Ω RC1/2 composition	R756	1-246-685	3.3 kΩ
R620	1-246-625	10Ω	R757	1-246-689	4.7 kΩ
R651	1-202-629	220 kΩ RC1/2 composition	R758	1-246-679	1.8 kΩ
R652	1-202-808	470 kΩ RC1 composition	R759	1-246-635	27Ω
R653	1-202-581	2.2 kΩ RC1/2 composition	R760	1-246-667	560Ω
R654	1-202-581	2.2 kΩ RC1/2 composition	R761	1-246-687	3.9 kΩ
R655	1-202-808	470 kΩ RC1 composition	R762	1-246-661	330Ω
R656	1-202-581	2.2 kΩ RC1/2 composition	R763	1-246-653	150Ω
R657	1-202-585	3.3 kΩ RC1/2 composition			
R701	1-246-661	330Ω	R801	1-250-895	8.2 kΩ RD12T
R702	1-246-715	56 kΩ	R802	1-202-631	270 kΩ RC1/2 composition
R703	1-246-705	22 kΩ	R803	1-202-575	1.2 kΩ RC1/2 composition
R704	1-246-661	330Ω	R804	1-207-249	1.8Ω 1W wire wound
			R805		— discarded —
			R806	1-205-459	82Ω 7W cement coated

* Mark to be selected.

**TRINITRON®
COLOUR TV**

KV-1320UB

UK and Hongkong Model

Serial No. up to 100,000

SUPPLEMENT



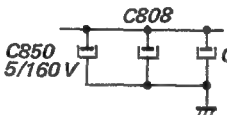
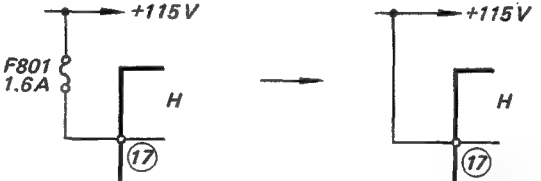
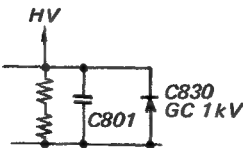
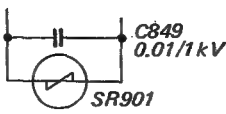
No. 3

September, 1972

This supplement updates the service manual to include corrections and production changes covering the model whose **Serial No. is 100,000 and less**. Please file this supplement in the service manual.

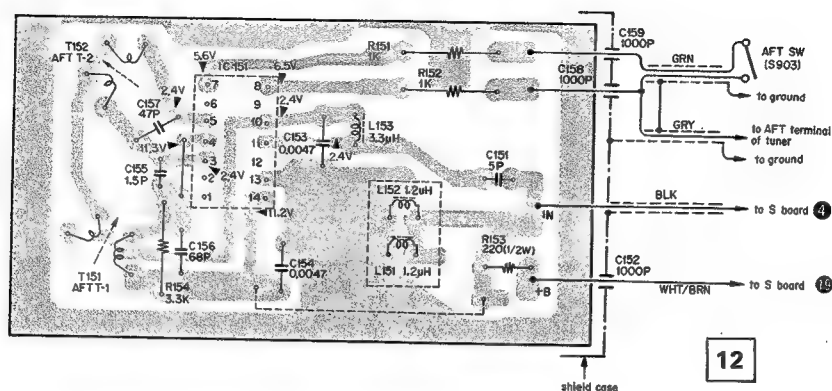
SONY®
SERVICE MANUAL

1. CHANGED PORTIONS ON DIAGRAMS

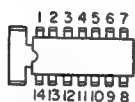
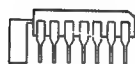
Mark on Diagram	Ref. No.	Description	Applicable Serial No.
(A)	R153 R155	 <p>R153 270 (1/2W) R155 1.2k R153 220 (1/2W) R155 is discarded.</p>	15,001 and later
(B)	R271 R275	 <p>R271 270 (1/2W) R275 1.2k R271 220 (1/2W) R275 is discarded.</p>	15,001 and later
(C)	R436	2.2k → 22	15,001 and later
(D)	R348	22 → 10	15,001 and later
(E)	R369	22 → 10	15,001 and later
(F)	R425	1k → 1.2k	15,001 and later
(G)	R384	1.2k → 560	15,001 and later
(H)	R464	33k → 39k	15,001 and later
(J)	R901 S901	R901 (1.2k, 5W) is discarded. Connecting point of power switch (S901) is changed.	32,601 (UK) 11,401 (Hong Kong) and later
(K)	C850	 <p>C850 5/160V C808 C807 C850 is added.</p>	11,501 and later
(L)	F801	 <p>+115V F801 1.6A H 17 F801 is discarded.</p>	15,737 and later
(M)	C830	 <p>HV C830 GC 1kV C801 C830 is added.</p>	45,301 and later
(N)	C849	 <p>C849 0.01/1kV SR901 C849 is added.</p>	15,001 and later
(P)	C601 C602	0.0047/150V → 0.0047/500V	25,001 and later

2. DIAGRAMS

2-1. AFT CIRCUIT BOARD

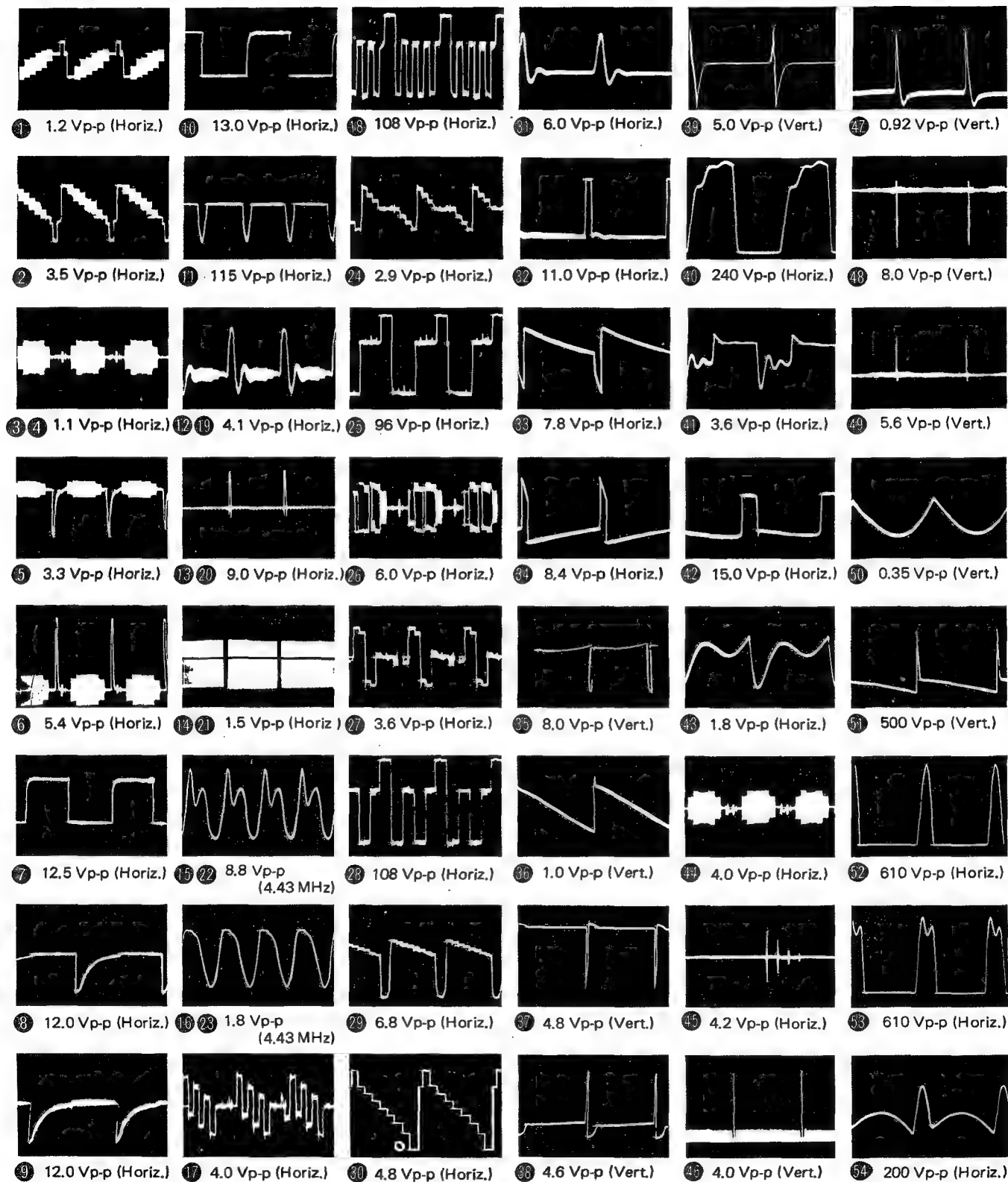


1C151



bottom view

2-2. WAVEFORMS



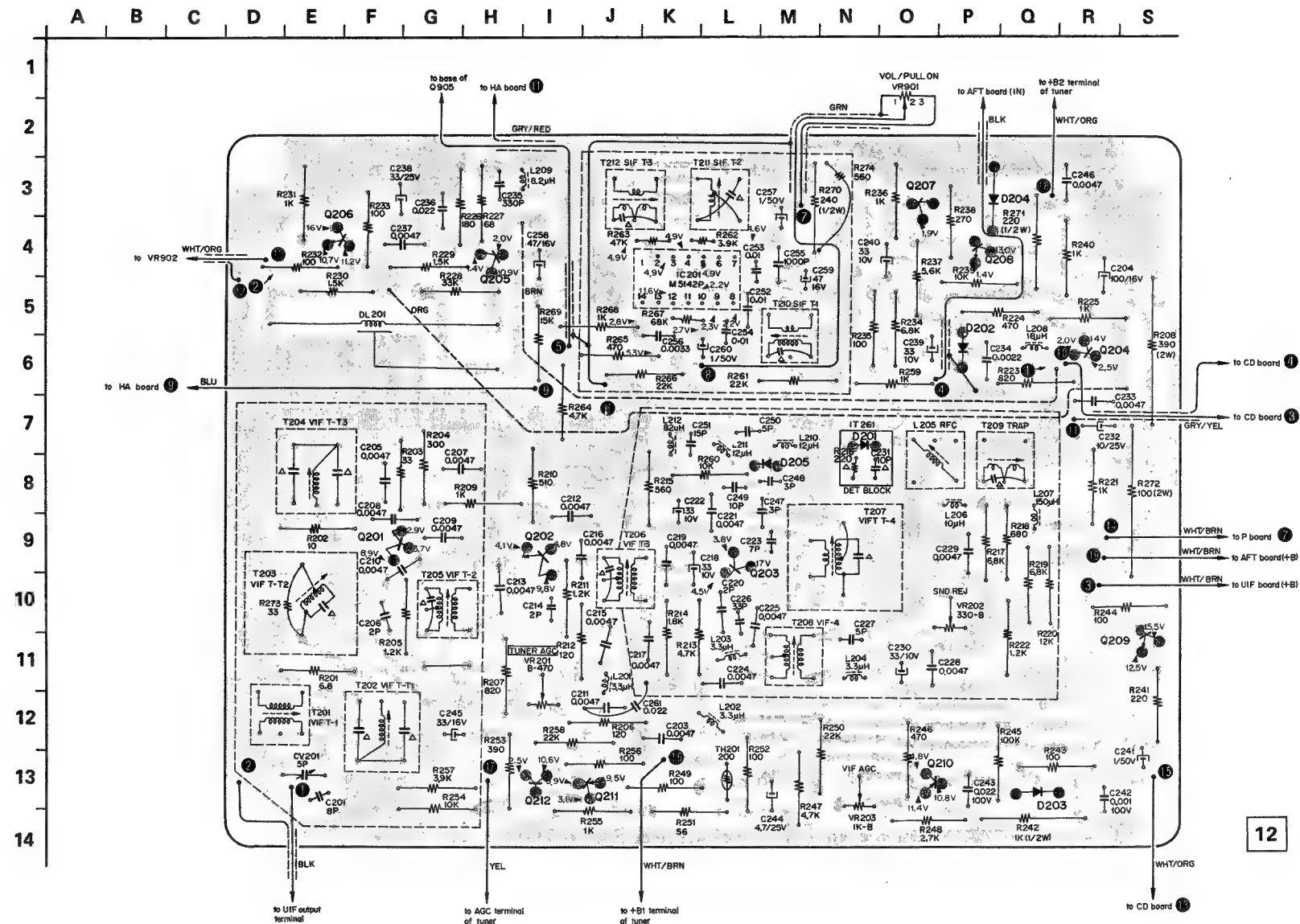
2-3. S CIRCUIT BOARD



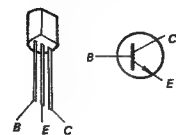
110 Vp-p (Horiz.)

TRANSISTORS		
Q201	F-9	2SC1129
Q202	I-9	2SC1129
Q203	L-9	2SC1128
Q204	R-6	2SC633A
Q205	H-4	2SC633A
Q206	E-4	2SC633A
Q207	O-3	2SC633A
Q208	P-4	2SC633A
Q209	S-11	2SC633A
Q210	O-13	2SA678
Q211	J-13	2SA678
Q212	I-13	2SC633A

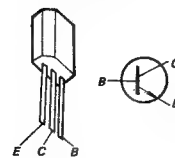
DIODES		
D201	N-7	1T261
D202	P-6	1T40
D203	Q-13	1T40
D204	P-3	ZB1-11
D205	M-8	1T261



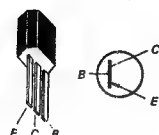
2SC1128
2SC1129



2SC633A



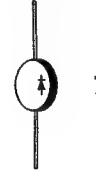
2SA678



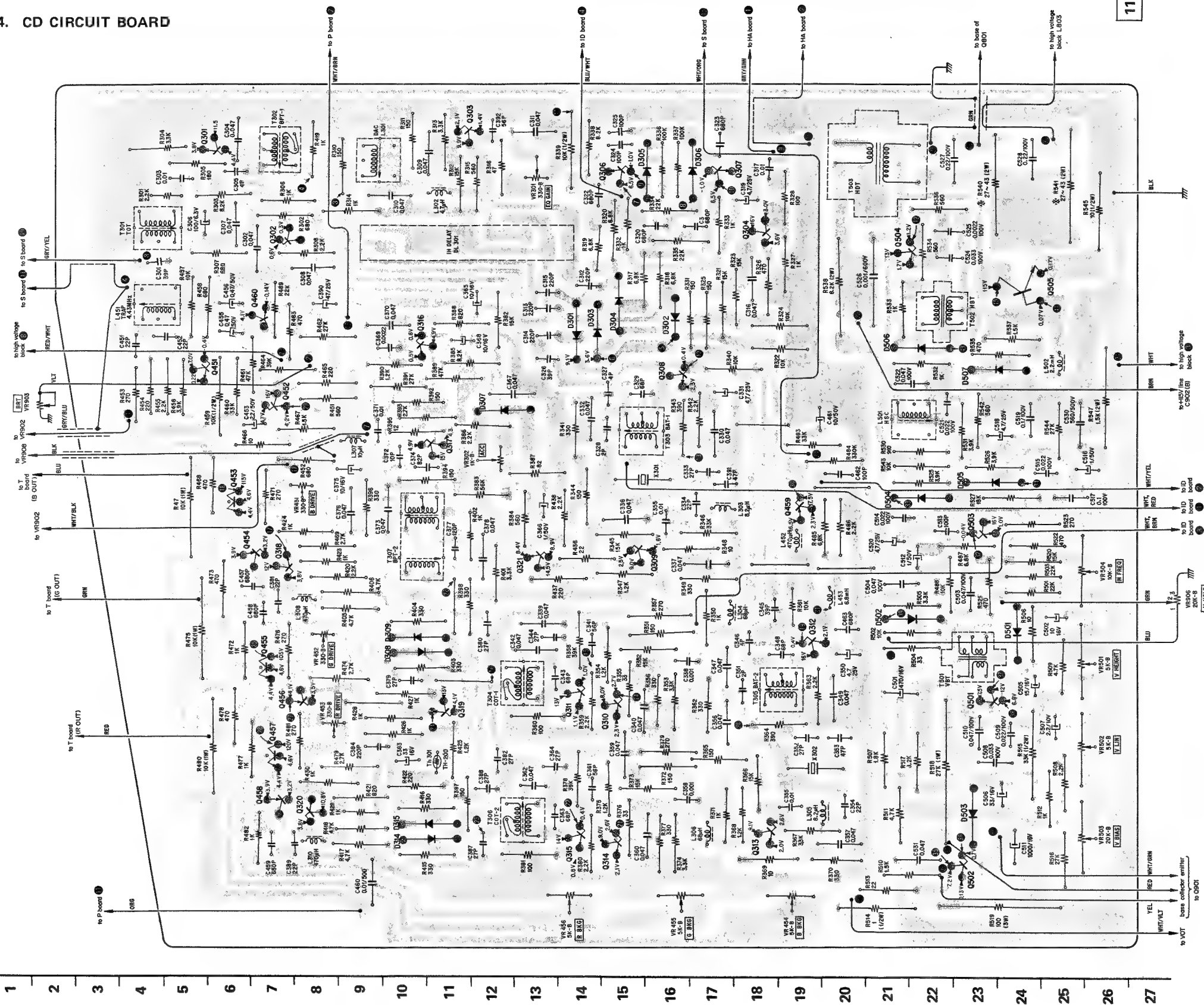
1T261
1T40



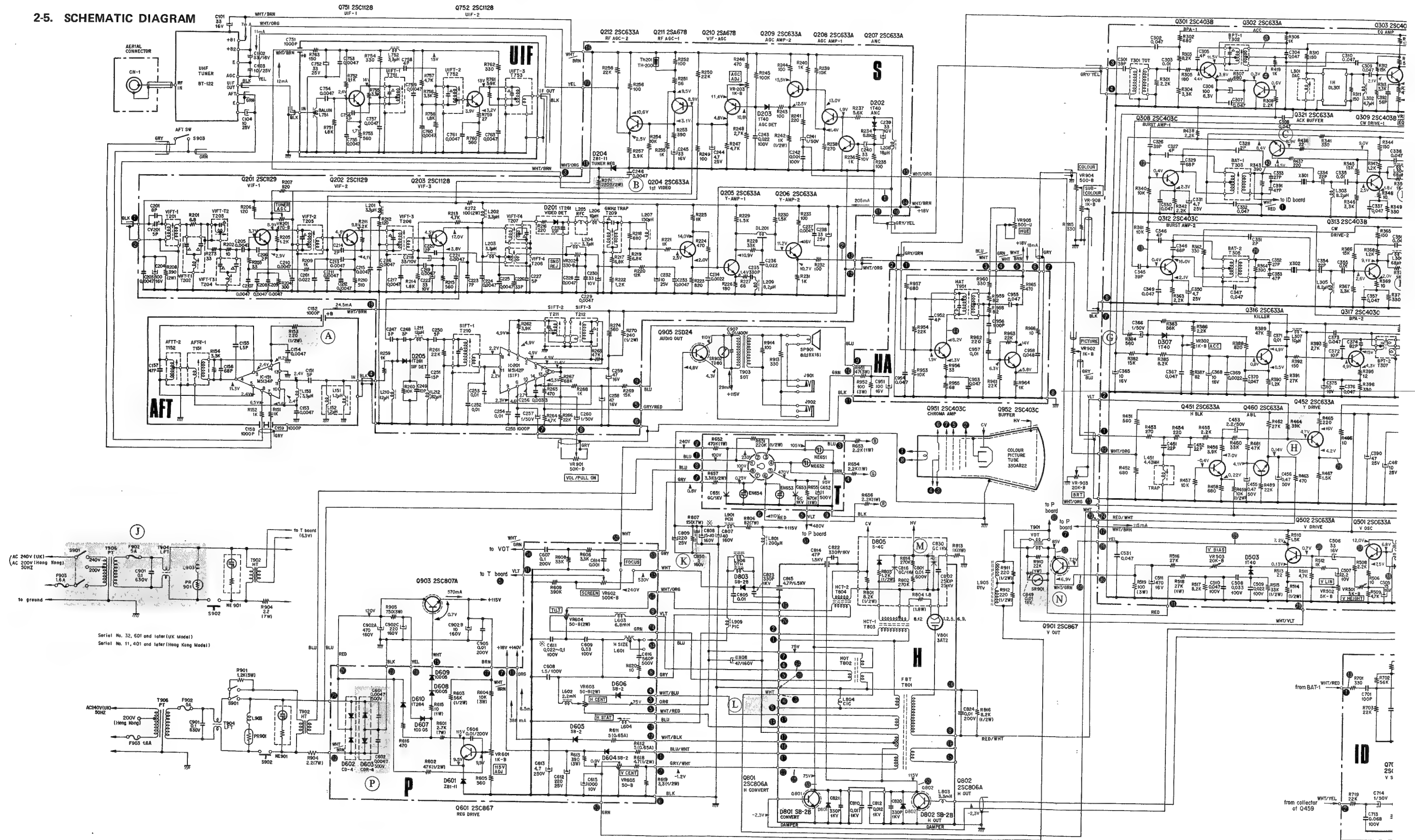
ZB1-11

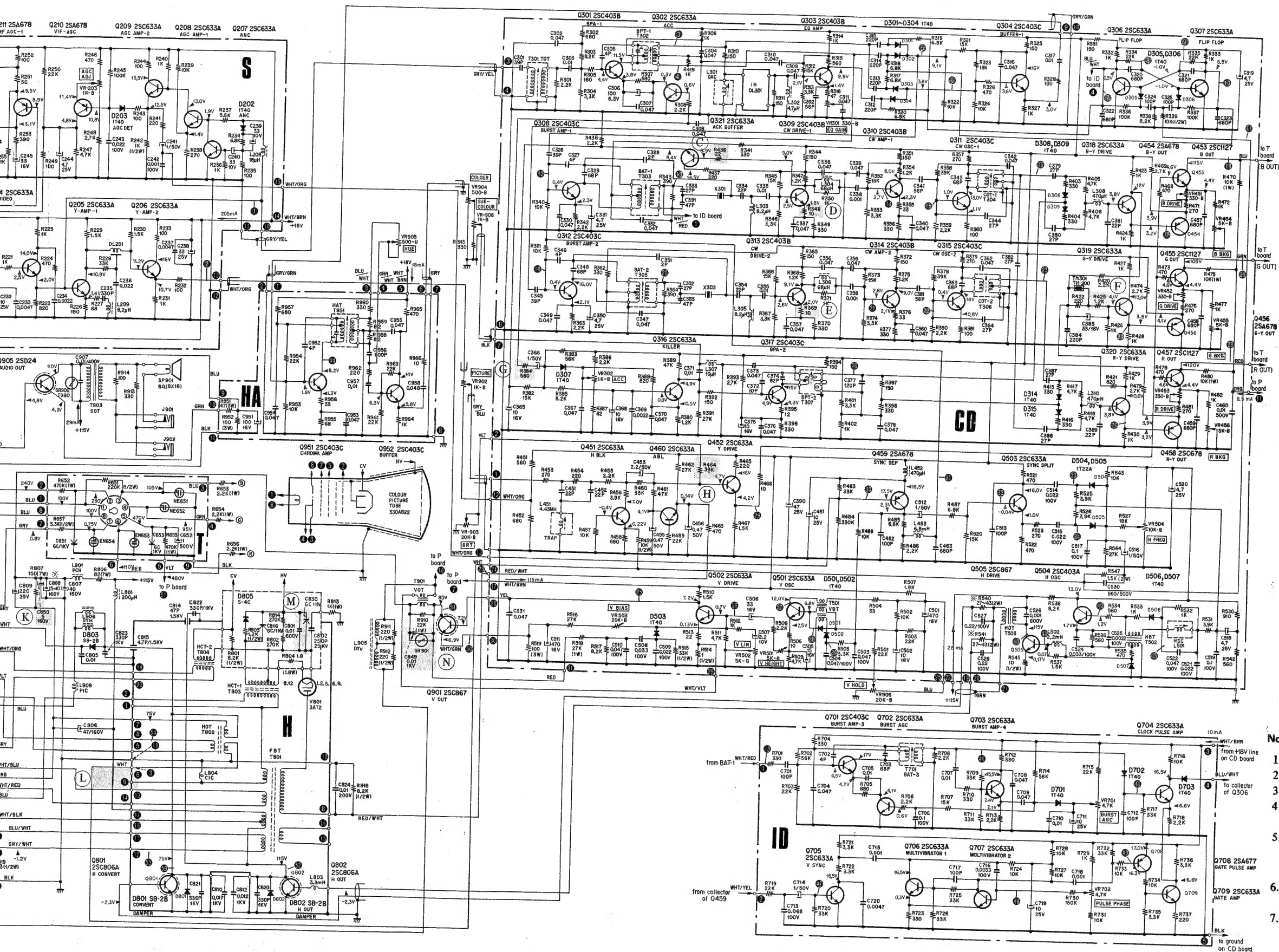


24. CD CIRCUIT BOARD



2-5. SCHEMATIC DIAGRAM





Note:

1. All capacitors are 50 WV unless otherwise specified.
2. All resistors are $\frac{1}{4}W$ unless otherwise specified.
3. All resistance values are in ohms. $k = 1000$
4. All capacitance values are in μF except as indicated with p, which means μF .
5. Voltages measured from chassis to point indicated with a VOM (DC 20k ohms/V) with colour signal input.
6. Resistance values marked \times are to be selected to yield specified operating conditions.
7. Δ marks show the internal components of transformers.

3. PARTS LIST OF CHANGED PARTS

1. Mechanical Parts

<u>Part No.</u>	<u>Description</u>
X-43048-02-5	cabinet ass'y
4-304-806-00	cabinet
4-304-145-00	mounting plate, power transformer

2. Packing Parts

<u>Part No.</u>	<u>Description</u>
4-304-173-00	cushion, left
4-304-845-03	packing carton
4-304-850-00	cushion, right

Note: Packing parts for UK model have been changed starting with Serial No. 37,001. There have been no changes with Hong Kong model.

3. Electrical Parts

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
C231	1-102-947-11	10 pF $\pm 5\%$ 50 WV ceramic
C261	1-101-005-11	0.022 μ F $\pm 100\%$ 50 WV ceramic
C601	1-102-085-11	0.0047 μ F $\pm 80\%$ 500 WV ceramic
C830	1-519-030-11	spark gap 1 kV
C849	1-108-355-11	0.01 μ F $\pm 20\%$ 1 kWV mylar
C850	1-119-246-11	5 μ F $\pm 20\%$ 160 WV electrolytic
C907	1-105-793-13	0.01 μ F $\pm 10\%$ 400 WV mylar
R153	1-244-857-11	220 Ω $\frac{1}{2}$ W
R155		-----
R216	1-244-657-11	220 Ω
R242	1-244-873-11	1 k Ω $\frac{1}{2}$ W
R270	1-244-858-11	240 Ω $\frac{1}{2}$ W
R271	1-244-857-11	220 Ω $\frac{1}{2}$ W
R275		-----
R348	1-244-625-11	10 Ω

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R369	1-244-625-11	10 Ω
R384	1-244-667-11	560 Ω
R425	1-244-675-11	1.2 k Ω
R436	1-244-633-11	22 Ω
R464	1-244-711-11	39 k Ω
R515	1-244-909-11	33 k Ω $\frac{1}{2}$ W
R518	1-258-107-11	27 k Ω 1W
R545	1-244-825-11	10 Ω $\frac{1}{2}$ W
R901		-----
R910	1-258-105-11	22 k Ω 1W
VR901	1-222-624-11	50 k Ω -D variable (PULL ON/VOL)
VR905	1-222-579-11	500 Ω -U variable (HUE)
F801		-----
F902	1-532-366-00	fuse, 5A 125V
NE901	1-519-019-00 1-519-077-00	neon lamp
TB901	1-536-189-00 1-536-386-00	terminal lug, 1L1

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R369	1-244-625-11	10Ω
R384	1-244-667-11	560Ω
R425	1-244-675-11	1.2 kΩ
R436	1-244-633-11	22Ω
R464	1-244-711-11	39 kΩ
R515	1-244-909-11	33 kΩ ½W
R518	1-258-107-11	27 kΩ 1W
R545	1-244-825-11	10Ω ½W
R901		-----
R910	1-258-105-11	22 kΩ 1W
VR901	1-222-624-11	50 kΩ-D variable (PULL ON/VOL)
VR905	1-222-579-11	500Ω-U variable (HUE)
F801		-----
F902	1-532-366-00	fuse, 5A 125V
NE901	1-519-019-00	neon lamp
	1-519-077-00	
TB901	1-536-189-00	terminal lug, 1L1
	1-536-386-00	

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R807	1-205-460	150Ω 7W cement coated	VR601	1-222-715	1kΩ-B variable (115V ADJ)
R813	1-202-776	1kΩ RC1 composition	VR602	1-222-809	500kΩ-B adjustable (SCREEN)
R814	1-202-631	270kΩ RC1/2 composition	VR603	1-222-172	50Ω-B 2W variable (H. CENT)
R815		— discarded —	VR604	1-222-172	50Ω-B 2W variable (TILT)
R816	1-250-895	8.2kΩ RD12T	VR605	1-222-172	50Ω-B 2W variable (V. CENT)
R901	1-205-462	1.2kΩ 5W cement coated	VR701	1-221-978	4.7kΩ-B adjustable (BURST AGC)
R902		— discarded —	VR702	1-221-978	4.7kΩ-B adjustable (PULSE PHASE)
R903		— discarded —	VR901	1-222-342	50kΩ-D variable (VOL/PULL ON)
R904	1-205-464	2.2Ω 7W cement coated	VR902	1-222-383	1kΩ-B variable (PICTURE)
R905	1-205-466	750Ω 3W cement coated	VR903	1-222-384	20kΩ-B variable (BRT)
R910	1-211-172	22kΩ RD1P	VR904	1-222-386	500Ω-B variable (COLOUR)
R911		— discarded —	VR905	1-222-527	500Ω-U variable (HUE)
R912		— discarded —	VR906	1-222-384	20kΩ-B variable (V. HOLD)
R913	1-246-661	330Ω	MISCELLANEOUS		
R914	1-246-649	100Ω	DL201	1-415-045	delay line
R915	1-246-661	330Ω	DL301	1-415-046	delay line, 1H
R951	1-217-027	47Ω 3W wire wound		1-452-014	magnet B, disk
R952	1-205-455	100Ω 3W cement coated		1-452-032	magnet, disk (small)
R953	1-246-697	10kΩ		1-452-038	magnet, convergence
R954	1-246-705	22kΩ		1-452-054	magnet, rubber ferrite ring
R955	1-246-645	68Ω	SP901	1-502-309	speaker
R956	1-246-637	33Ω		1-506-108	terminal pin, sv
R957	1-246-669	680Ω		1-506-186	pin plug
R958	1-246-647	82Ω	I901, 902	1-507-169-13	jack, earphone
R959	1-246-647	82Ω		1-507-901-12	jack nut
R960	1-246-661	330Ω		1-508-457	aerial connector
R961	1-246-705	22kΩ	S902	1-515-119	circuit breaker
R962	1-246-657	220Ω	S903	1-514-892	rotary switch, AFT
R963	1-246-705	22kΩ	NE651	1-519-013-13	neon lamp
R964	1-246-673	1kΩ	NE652		
R965	1-246-665	470Ω	NE653		
R966	1-246-625	10Ω	NE654		
VR201	1-222-805	470Ω-B adjustable (TUNER AGC)	NE901	1-519-019-26	neon lamp
VR202	1-221-986	330Ω-B adjustable (SND REJ)	V801	1-525-118	vacuum tube, 3AT2
VR203	1-222-804	1kΩ-B adjustable (AGC ADJ)	K651	1-526-086	socket, picture tube
VR301	1-222-986	330Ω-B adjustable (EQ GAIN)	ANODE	1-526-130-51	anode cap (1), high voltage
VR302	1-222-804	1kΩ-B adjustable (ACC)	NECK	1-526-131-51	anode cap (2), convergence
VR451	1-222-986	330Ω-B adjustable (B. DRIVE)	K801	1-526-187	socket, mold
VR452	1-222-986	330Ω-B adjustable (G. DRIVE)	X301, 302	1-527-183	crystal
VR453	1-222-986	330Ω-B adjustable (R. DRIVE)	F801	1-532-209	fuse, 1.6A
VR454	1-222-716	5kΩ-B adjustable (B. BKG)	F902	1-532-214	fuse, 5A/125V
VR455	1-222-716	5kΩ-B adjustable (G. BKG)	F903	1-532-259	fuse, 1.6A
VR456	1-222-716	5kΩ-B adjustable (R. BKG)		1-536-047	terminal strip, E type
VR501	1-221-389	5kΩ-B adjustable (V. HEIGHT)		1-534-502	cord, power supply
VR502	1-221-389	5kΩ-B adjustable (V. LIN)		1-536-171	lug terminal plate, L7L
VR503	1-222-807	20kΩ-B adjustable (V. BIAS)	TB901	1-536-189	lug terminal strip, 1L1
VR504	1-221-304	10kΩ-B adjustable (H. FREQ)	TB802	1-536-221	terminal plate ass'y, 3P
			TB803	1-536-273	terminal plate ass'y, 8p
				1-536-296	lug terminal strip, 1L3L1
				1-536-296	lug terminal strip, 1L3L1
				8-735-300	Picture tube (330AB22)